JUNE 2004

# Smithsonian

## *And the Winners Are...* Photo Contest Results

Revisiting the Seven Wonders of the World
*(Quick. How many can you name?)*

The Great Diamond Hoax of 1872

To Mars and Back—*Alive!*

India's Warrior Horse Comes to America

When Salem (Mass.) Set Sail for China

Better Coffee, Better World?

Behind the Magic of Ricky Jay

**FINALIST, PEOPLE**
**DAVID POE, 50**
**CEDAR FALLS, IOWA**
PHOTOGRAPHED MARCH 2003
ISLA MUJERES, MEXICO

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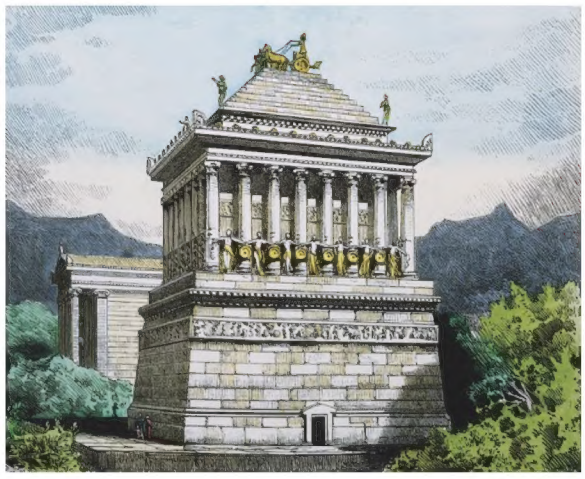
JUNE 2004 VOLUME 35, NUMBER 3

# FEATURES

*"THE EAST INDIA MARINE SOCIETY'S first inventory, published in 1821, listed a 'waistcoat made of the intestines of the Sea Lion' and 'Three thousand yards of human hair, braided.'"*

*—"SALEM SETS SAIL," PAGE 92*



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**ON THE COVER** Says contest finalist David Poe of his entry in the People category: "Vacationing in Isla Mujeres, Mexico, my son rested against a brightly colored wall. I found the combination of the orange against the green and yellow very striking."

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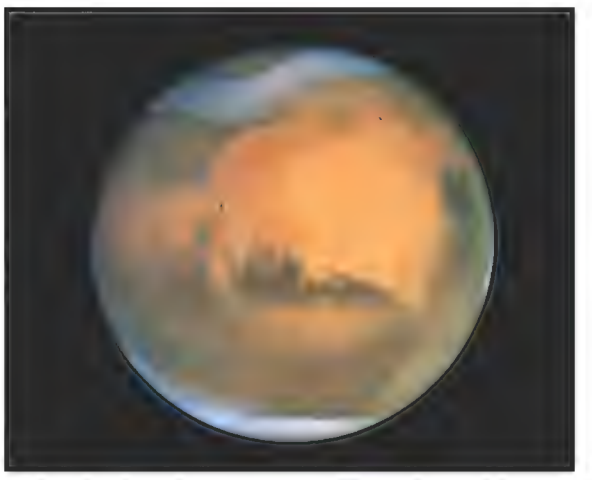

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# Tons of Talent

*Picking the winners of our first photo contest required a bit of heavy lifting* ~ BY CAREY WINFREY

JUDGING OUR PHOTO CONTEST turned out to be a lot of fun. It also turned out to be a ton of work. Literally. We received more than 12,000 entries, and it fell to editorial assistants Michelle Strange and Chai Woodham to schlep heavy bag after heavy bag of photographs from the post office a few blocks away to our offices. Then they opened each entry and sorted its contents into our five categories—The Natural World, People, Americana, Travel and The Arts. Once the December 31 deadline for entries passed, picture editor Bonnie Stutski and associate art director Erik Washam plowed through the photographs, separating them into three piles: Yes, No and Maybe. I then went through the Maybes and upgraded to Yeses any that caught my eye. That's when the real fun began. Assistant editor Helen Starkweather—the contest's true hero—spread out all the Yeses on a conference table and rounded up art director Brian Noyes, associate picture editor Molly Roberts, Stutski and Washam to winnow each category to the ten best photographs. This was neither easy nor even always cordial. Sometimes, to maintain staff harmony, we had to vote by secret ballot.

Left to right: Noyes, Starkweather, Washam, Roberts and Stutski: Not always cordial.

Once we had our 50 finalist photographs, Starkweather gathered the entire staff and asked each person to vote on five grand prize finalists. Of those, the clear winner was Oscar Williams' dynamic picture of a boy running up a flight of stairs in Puerto Vallarta, Mexico (see "Treasure Trove," p. 56). Williams wins $1,000 and a Canon EOS Elan 7e 35mm camera kit. The camera was donated by Canon. All 50 finalists may be seen at our Web site: www.smithsonianmag.com.

Interestingly, all five category winners are women: Susan Pyburn (Travel), Sarah T. Wolf (People), Irene Baron (Americana), Linka A. Odom (The Arts) and Marianne Soufas (The Natural World). Each wins $500 and a Canon EOS Rebel Ti 35mm camera kit. The cameras were donated by Canon. Congratulations to all!

THE VERY FIRST TIME New Delhi-based writer Jason Overdorf heard about the Marwari horse, he was hooked ("Saving the Raja's Horse," p. 66). "The Marwari began to disappear when the British Raj effectively ended centuries of cavalry battles among various Hindu Rajput clans," he says. "Then, when India won independence from Britain and ushered in democracy, stripping the Rajput royalty of their power, the horse became a symbol of the feudal lords' oppression of their subjects and was nearly wiped out. And finally, when Prime Minister Indira Gandhi abolished the privy purses that the erstwhile royalty received, the Marwari began a comeback as part of Rajasthan's modern tourist boom. So you had princely India, British India, socialist India and capitalist India all wrapped up in the story of this one amazing horse."

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sep

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**September 19**
**SAN GENNARO FESTIVAL**
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**September 20 – October 5**
**OKTOBERFEST**
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oct

**October 28 – November 6**
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# Pizza Park

*Sure, the new Kids' Farm at the National Zoo will be educational, but a giant rubber pizza and a "caring corral" will make it also a place for fun*

TO THE LONG HISTORY of Americans' infatuation with pizza, we're about to add another chapter. When the new Kids' Farm opens in June at the National Zoo here in Washington, a big, climb-aboard pie will be one of the principal attractions. What's the pizza doing on a farm? Indeed, what's a farm doing at the Zoo? When people think of the animals they expect to find at a zoo, it's the popular megavertebrates that come first to mind—lions, tigers, pandas, great apes, elephants and such. The animals that have the greatest impact on their lives—chickens and cattle, for example—are seldom featured; in fact, in today's ever more urbanized society, they may be as rarely seen in a natural setting as exotic species. At the Kids' Farm youngsters will be introduced to these "everyday" animals and their habitats. The farm is home to a cow pasture, a chicken house, a duck house, a red barn, and a "caring corral," where children will have an opportunity to perform routine chores and wash and care for goats and miniature donkeys under the supervision of Zoo staff and FONZ (Friends of the National Zoo) volunteers. To many kids who visit the exhibit, the distinctive order and routines of a rural world may be as foreign as the landscape of the moon.

The Kids' Farm covers nearly two outdoor acres of the Zoo and was built with a $5 million appropriation from Congress. Particular thanks are due Congressman Ralph Regula (R-OH), a longtime member of the Smithsonian's Board of Regents, who championed the project. The exhibit is designed to appeal most to children between the ages of 3 and 8, but it won't hurt for adults as well to be reminded of the two fundamental messages the young are meant to take from the site. The first is that the proper care of animals requires a canny mix of patience, attention, dedication, common sense and knowledge. The second is that the greater part of the food we eat each day comes from farms.

The Kids' Farm will be home to goats as well as cows, chickens, ducks and miniature donkeys.

Which brings me to that pizza—22 feet across, brightly colored, rubber-surfaced (all too often like the real thing) and pedestrian friendly, dominating a play area that's separate from the animals' terrain. The pie conveys the second message of the exhibit: all the principal ingredients of this popular food are farm products. (Ours is a veggie pizza; no anchovies, please.) The high-density foam toppings include slices of mushrooms and onions that can be moved about the pie, a stationary big tomato, a wedge of cheese kids can slide down, and the hollow wheel of a black olive large enough for a child to curl within like a bit of stuffing. The pizza is surrounded by an assortment of hands-on exhibits that connect the ingredients with their origins on the farm. A stylized laminate olive tree, for example, flips open to reveal how the olives get from tree to topping. But not everything here is plastic. On the wedge-shaped plots of an adjacent circular garden, framed by a foam square that mimics the shape of a pizza box, we'll be growing real tomatoes, olives, peppers, garlic and other herbs, wheat and—with a nod to the cardboard pizza box—a pine tree.

Make no mistake about it, the Kids' Farm is, above all, a place to have fun. The messages don't overwhelm. The outsized rubber pizza can be just that, and needn't be topped with meaning. And kids don't have to think "rural context" when they wash a goat. But that's not to diminish the exhibit's gently instructive lessons: do not underestimate what it takes to care for an animal, and do not think that food grows in microwavable containers. Proust had a bit of fancy cake to propel him into the past; there's no reason that a supersized pizza can't ease children into a richer present.

*Lawrence M. Small*
SECRETARY OF THE SMITHSONIAN INSTITUTION

D.A. PETERSON; LAURENCE MONNERET / STONE / GETTY IMAGES

# "I won't let arthritis pain keep me from teaching."

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With VIOXX you can experience nights with less pain and mornings with less stiffness because just one little pill works for a full 24 hours.

### VIOXX RELIEVES ARTHRITIS PAIN AND INFLAMMATION

VIOXX is used to reduce pain and inflammation—soreness and swelling.

### TAKE WITH OR WITHOUT FOOD

You don't have to worry about scheduling VIOXX around meals.

### ASK YOUR DOCTOR ABOUT VIOXX AND IF A FREE SAMPLE IS RIGHT FOR YOU

For a free information guide on VIOXX, call 1-800-MERCK-30 or visit **vioxx.com**.

### IMPORTANT INFORMATION ABOUT VIOXX

People with allergic reactions, such as asthma, to aspirin or other arthritis medicines should not take VIOXX. In rare cases, serious stomach problems, such as bleeding, can occur without warning.

Tell your doctor if you have liver or kidney disease, or a history of angina, heart attack, or a blocked artery in your heart. VIOXX cannot take the place of aspirin for the prevention of heart attack or stroke. VIOXX should not be used by women in late pregnancy.

In clinical studies, commonly reported side effects included upper respiratory infection, diarrhea, nausea, and high blood pressure. Report any unusual symptoms to your doctor.

Please see the Patient Product Information for VIOXX on the next page for additional information that should be discussed with your doctor.

ONCE DAILY

**VIOXX®**

(rofecoxib)

FOR EVERYDAY VICTORIES

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# Patient Information about
# VIOXX® (rofecoxib tablets and oral suspension)
# VIOXX® (pronounced "VI-ox")
# for Osteoarthritis, Rheumatoid Arthritis and Pain
# Generic name: rofecoxib ("ro-fa-COX-ib")

You should read this information before you start taking VIOXX®. Also, read the leaflet each time you refill your prescription, in case any information has changed. This leaflet provides only a summary of certain information about VIOXX. Your doctor or pharmacist can give you an additional leaflet that is written for health professionals that contains more complete information. This leaflet does not take the place of careful discussions with your doctor. You and your doctor should discuss VIOXX when you start taking your medicine and at regular checkups.

## What is VIOXX?

VIOXX is a nonsteroidal anti-inflammatory drug (NSAID) that is used to reduce pain and inflammation (swelling and soreness). VIOXX is available as a tablet or a liquid that you take by mouth.

VIOXX is a medicine for:
- relief of osteoarthritis (the arthritis caused by age-related "wear and tear" on bones and joints)
- relief of rheumatoid arthritis in adults
- management of acute pain in adults (like the short-term pain you can get after a dental or surgical operation)
- treatment of menstrual pain (pain during women's monthly periods).

## Who should not take VIOXX?

Do not take VIOXX if you:
- have had an allergic reaction such as asthma attacks, hives, or swelling of the throat and face to aspirin or other NSAIDs (for example, ibuprofen and naproxen).
- have had an allergic reaction to rofecoxib, which is the active ingredient of VIOXX, or to any of its inactive ingredients. (See Inactive Ingredients at the end of this leaflet.)

## What should I tell my doctor before and during treatment with VIOXX?

Tell your doctor if you are:
- pregnant or plan to become pregnant. VIOXX should not be used in late pregnancy because it may harm the fetus.
- breast-feeding or plan to breast-feed. It is not known whether VIOXX is passed through to human breast milk and what its effects could be on a nursing child.

Tell your doctor if you have:
- history of angina, heart attack or a blocked artery in your heart
- kidney disease
- liver disease
- heart failure
- high blood pressure
- had an allergic reaction to aspirin or other NSAIDs
- had a serious stomach problem in the past.

Tell your doctor about:
- any other medical problems or allergies you have now or have had.
- all medicines that you are taking or plan to take, even those you can get without a prescription.

Tell your doctor if you develop:
- serious stomach problems such as ulcer or bleeding symptoms (for instance, stomach burning or black stools, which are signs of possible stomach bleeding).
- unexplained weight gain or swelling of the feet and/or legs.
- skin rash or allergic reactions. If you have a severe allergic reaction, get medical help right away.

## How should I take VIOXX?

VIOXX should be taken once a day. Your doctor will decide what dose of VIOXX you should take and how long you should take it. You may take VIOXX with or without food.

## Can I take VIOXX with other medicines?

Tell your doctor about all of the other medicines you are taking or plan to take while you are on VIOXX, even other medicines that you can get without a prescription. Your doctor may want to check that your medicines are working properly together if you are taking other medicines such as:
- warfarin (a blood thinner)
- theophylline (a medicine used to treat asthma)
- rifampin (an antibiotic)
- ACE inhibitors (medicines used for high blood pressure and heart failure)
- lithium (a medicine used to treat a certain type of depression).

VIOXX cannot take the place of aspirin for prevention of heart attack or stroke. If you take both aspirin and VIOXX, you may have a greater chance of serious stomach problems than if you take VIOXX alone. If you are currently taking aspirin for prevention of heart attack or stroke, you should not discontinue taking aspirin without consulting your doctor.

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## What are the possible side effects of VIOXX?

Serious but rare side effects that have been reported in patients taking VIOXX and/or related medicines have included:

- Serious stomach problems, such as stomach and intestinal bleeding, can occur with or without warning symptoms. These problems, if severe, could lead to hospitalization or death. Although this happens rarely, you should watch for signs that you may have this serious side effect and tell your doctor right away.
- Heart attacks and similar serious events have been reported in patients taking VIOXX.
- Serious allergic reactions including swelling of the face, lips, tongue, and/or throat which may cause difficulty breathing or swallowing and wheezing occur rarely but may require treatment right away. Severe skin reactions have also been reported.
- Serious kidney problems occur rarely, including acute kidney failure and worsening of chronic kidney failure.
- Severe liver problems, including hepatitis, jaundice and liver failure, occur rarely in patients taking NSAIDs, including VIOXX. Tell your doctor if you develop symptoms of liver problems. These include nausea, tiredness, itching, tenderness in the right upper abdomen, and flu-like symptoms.

In addition, the following side effects have been reported: anxiety, blurred vision, colitis, confusion, constipation, decreased levels of sodium in the blood, depression, fluid in the lungs, hair loss, hallucinations, increased levels of potassium in the blood, insomnia, low blood cell counts, menstrual disorder, palpitations, pancreatitis, ringing in the ears, severe increase in blood pressure, tingling sensation, unusual headache with stiff neck (aseptic meningitis), vertigo, worsening of epilepsy.

More common, but less serious side effects reported with VIOXX have included the following:

Upper and/or lower respiratory infection and/or inflammation
Headache
Dizziness
Diarrhea
Nausea and/or vomiting
Heartburn, stomach pain and upset
Swelling of the legs and/or feet
High blood pressure
Back pain
Tiredness
Urinary tract infection.

These side effects were reported in at least 2% of osteoarthritis patients receiving daily doses of VIOXX 12.5 mg to 25 mg in clinical studies.

The side effects described above do not include all of the side effects reported with VIOXX. Do not rely on this leaflet alone for information about side effects. Your doctor or pharmacist can discuss with you a more complete list of side effects. Any time you have a medical problem you think may be related to VIOXX, talk to your doctor.

## What else can I do to help manage my arthritis pain?

Talk to your doctor about:
- Exercise
- Controlling your weight
- Hot and cold treatments
- Using support devices.

## What else should I know about VIOXX?

This leaflet provides a summary of certain information about VIOXX. If you have any questions or concerns about VIOXX, osteoarthritis, rheumatoid arthritis or pain, talk to your health professional. Your pharmacist can give you an additional leaflet that is written for health professionals.

Do not share VIOXX with anyone else; it was prescribed only for you. It should be taken only for the condition for which it was prescribed.

Keep VIOXX and all medicines out of the reach of children.

Inactive Ingredients:

Oral suspension: citric acid (monohydrate), sodium citrate (dihydrate), sorbitol solution, strawberry flavor, xanthan gum, sodium methylparaben, sodium propylparaben.

Tablets: croscarmellose sodium, hydroxypropyl cellulose, lactose, magnesium stearate, microcrystalline cellulose, and yellow ferric oxide.

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# LETTERS

*Readers respond to the April issue:*

### DEFENDING THE ALAMO

"REMEMBERING THE ALAMO" shows that revisionism is still alive and well, at least in the movie industry. There are few military events in American history that contain the drama and romance of the Texians' last stand at the Alamo mission. Since childhood I've read books and watched films about this event. If some versions bear little resemblance to the actual event, each contains the same basic theme of courage and sacrifice by everyday people. The latest, and certainly not the last, version of the Alamo saga, John Lee Hancock's movie *The Alamo*, presents the current generation's spin on this tale. Time will tell if this effort will have as lasting an impact as some of its predecessors.

*BRIAN ROCKWELL*
PHOENIX, ARIZONA

### CRYING SHAME

A FEW TIMES IN my 61 years I have actually burst into tears. The most recent is when I read in "Colossal Ode" Emma Lazarus' poem "The New Colossus," engraved on the Statue of Liberty's pedestal. Events of the past few years have had me in a state of dismay. How lovely to be reminded of the true spirit of America.

*FRANCES SHEETS*
WAYCROSS, GEORGIA

### UNBIASED BEEB?

IN RESPONSE TO the assertion that the BBC's World Service ("Battle of the 'Beeb'") is "the gold standard of reliable, unbiased reporting," I couldn't help thinking of the Chico Marx line in *Duck Soup*: "Who you gonna believe, me or your own eyes?" (Well, let's make that "ears.") As someone who listens to the World Service each day, I can assure you that the "Beeb" is anything but unbiased. It has always treated George W. Bush with elitist scorn, and its coverage of the American war effort in Iraq has been undisguisedly hostile. Every talk-radio station has a political slant; the BBC is no different.

*TED KLEIN*
NEW YORK, NEW YORK

### PHOTO BOMBS

I FEEL QUITE SURE that no bombardier trainees ever performed "daily calisthenics" with real 100-pound bombs as pictured in "Photos for All Time." Looking at the position of the trainees' hands in the U.S. Air Force photo, it's quite obvious they're hoisting something considerably lighter than 100 pounds. As a bombardier in World War II, I had my picture taken raising a "100-pound bomb" over my head. What I held up was just the empty casing, which weighed about ten pounds. The Air Force press release was either ill-informed or imaginative.

*DAVID TYSEN NUTT*
MONROE TOWNSHIP, NEW JERSEY

### MIFFED IN SEATTLE

CONDESCENSION oozes from "Vaunted Vancouver" by Jonathan Kandell, a New Yorker. He praises Stanley Park, but his description of it is feeble and partial, saying only that the "landscaped elegance" of New York's Central Park and the "restorative powers" of Brooklyn's Prospect Park "pale in comparison"—as if everything were relative to New York. If no one told him about the vital arts scene in Vancouver, it's probably because he was instantly pegged as a New Yorker, for whom the real arts do not exist west of the Hudson River. "In what other city in the world," he asks, "can one ski on a nearby glacier in the morning . . . and sail the Pacific in the afternoon?" Clearly, he has never been to Seattle. Don't send him. His next piece should be on Central Park. That, he understands.

*WAYNE JOHNSON*
SEATTLE, WASHINGTON

### GOING NATIVE IN BRAZIL

"SAVING THE MUSIC TREE," about rescuing Brazil's pernambuco, discusses precautions taken to prevent accidents with snakes, and refers to *cobras*. I thought cobras were indigenous only to Asia and Africa. Are they in Brazil?

*B. E. WHEELER*
LONGVIEW, WASHINGTON

*The venomous hooded snake known in English as a cobra is not native to South America. But Brazilians commonly use a Portuguese word for snake,* cobra. *—Ed.*

### GEORGIA ON MY MIND

DURING A TEACHERS' exchange trip last October in the Republic of Georgia, I observed firsthand some of the corruption Jeffrey Tayler highlights in "Georgia at a Crossroads," including bribes for votes before the parliamentary election and random police searches of private vehicles. However, what I will remember far longer is the unbridled optimism of the average Georgian. More than once I heard, "Hope dies last."

*JIM L. THOMPSON*
BOZEMAN, MONTANA

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Please send letters to LettersEd@simag.si.edu or to **Letters, Smithsonian, MRC 951, P.O. Box 37012, Washington, D.C. 20013.** Include a telephone number and address. Letters may be edited for clarity or space. Because of the high volume of mail we receive, we cannot respond to all letters. Send queries about the Smithsonian Institution to info@si.edu or to VIARC, Public Inquiry Mail Service, P.O. Box 37012, Washington, D.C. 20013.

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Escape Hybrid

# "Doctor" Lewis' Thunderclappers

*As the corps struggles up the Missouri River, eating meat and drinking muddy water, Meriwether Lewis tends to their ailments*

*In early 1803, Meriwether Lewis had been sent by President Jefferson to Philadelphia to study with Benjamin Rush, one of the most respected physicians of the day. Rush, a signer of the Declaration of Independence and author of the earliest American textbook on psychiatry, had served as surgeon-general of the Continental Army during the American Revolution; in 1792 he was made professor of medicine at the University of Pennsylvania.*

*Along with most physicians, Rush believed that poisons in the body caused diseases; these poisons could be released through bloodletting or purging. He tutored Lewis on frontier illnesses, demonstrated the technique of bloodletting and assembled a medical kit for the captain's use. Lewis then set about obtaining the medical supplies he would need, including Turkish opium for nervousness, emetics (to induce vomiting), medicinal wine and 50 dozen Dr. Rush's Bilious Pills (laxatives), known to the men as thunderclappers. Since the men were plagued with gastrointestinal problems from their nearly all-meat diet and from drinking muddy river water, the pills—which were nearly 60 percent mercury—were freely dispensed. While they may not have cured any illnesses, the thunderclappers have served archaeologists well: traces of mercury remain in the soil along the Corps of Discovery's route, and some expedition campsites have been identified by excavating corps latrines.*

*By the end of June, the party had made its way about 250 miles upriver to a site near today's Little Platte River in Missouri.*

June 11: "Our hunters killed two Deer, G Drewry Killed 2 Bear in the Prareie to day, men verry lively Danceing & Singing &c."

June 3, 1804 [Cpt. William Clark]
I have a verry Sore Throat, & am Tormented with Musquetors & Small ticks.

June 4, 1804 [Clark]
Sent out 3 hunters, our mast broke by the boat running under a tree. . . . Seven Deer Killed to day by our hunters—one of the horses is Snaged, the other lost his Shous to day.

June 17, 1804 [Pvt. Patrick Gass]
This morning was clear and at five we renewed our voyage. Having proceeded about a mile we halted to get timber for oars; and while we remained here to make them our hunters came in and brought with them a handsome horse, which they had found astray. They also brought a bear, which they had killed.

June 17, 1804 [Clark]
The French higherlins Complain for the want of Provisions, Saying they are accustomed to eat 5 & 6 times a day, they are roughly rebuked for their presumption. . . . The party is much aflicted with *Boils* and Several have the Decissentary, which I contribute to the water.

June 18, 1804 [Clark]
Two thirds of [the men] with ulsers or Boils, Some with 8 or 10 of those Tumers.

June 21, 1804 [Clark]
The water we Drink, or the Common water of the missourie at this time, contains half a Comn Wine Glass of ooze or mud to every pint.

June 22, 1804 [Pvt. Joseph Whitehouse]
The current running very strong against us, and having to tow the boat it can hardly be imagined the fataigue that we underwent. . . . We Towed 12 Miles this day.

June 30, 1804 [Gass]
The day was clear and we continued our voyage; found high land on both sides of the river; and passed a large creek on the north side, called Platt, fifty yards wide. We broke our mast and encamped on the south side, where there were the most signs of game I ever saw.

GARY R. LUCY GALLERY, WASHINGTON, MO

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# Off the Beaten Track

*During a civil rights march in 1965, photographer Bruce Davidson left the highway to focus on a single Alabama sharecropper and her nine children* ~ BY PAUL MALISZEWSKI

Davidson's photograph reminds Felicia Blackman (in her mother's arms in 1965) of the obstacles her family would overcome.

BRUCE DAVIDSON / MAGNUM PHOTOS

A SINGLE MOTHER OF NINE, Annie Blackman picked cotton from six in the morning until eight at night, and in 1965 her day's pay was $1.25. The Blackman home, in Trickem Fork, Alabama, was a wood cabin with a front porch and a brick chimney. The windows were large but held no glass, just openings with shutters. There was an addition on the back, and the walls were patched with newspapers and magazines to keep out drafts. There was no electricity. Water was a mile away.

Trickem Fork, off Route 80 between Selma and Montgomery, drew national attention after 3,200 civil rights protesters led by Martin Luther King Jr. marched down the road in March 1965; by the time they reached the state capital, where they called for equality and voting rights for African-Americans, they numbered 25,000. Newspaper columnist Jimmy Breslin, who was covering the march, suggested that Bard Lindeman and W. C. Heinz, reporters for the *Saturday Evening Post*, "get off the highway" and find the real civil rights story in the towns along the way. They did. Their article, "Great Day at Trickem Fork," reported that the Blackman family ate mostly fatback and bread and that the Blackman children took peanut butter sandwiches to school when they could but sometimes went days without any lunch at all. Four decades later, Lindeman, who now lives in Stone Mountain, Georgia, and writes frequently about aging and the elderly, recalls the encounter. "Blackman did not think there was anything unusual about her circumstances," he says, but "her life was the embodiment of what the march was all about."

## "It was something huge," Felicia says of the movement and its impact on her family.

Felicia Blackman is an insurance agent and her daughter, Alicya, 16, an honor student.

Bruce Davidson, a photographer based in New York City, was documenting the march and took photographs for the *Saturday Evening Post* article, including an arresting image of Blackman in the doorway of the paper-covered room holding her youngest daughter, Felicia. The photograph, reprinted in Davidson's 2002 book *Time of Change* (St. Ann's Press), captures abstract subjects like racism and rural poverty—concerns of the growing protest movement—and renders them immediate and personal. Blackman was polite but wary in welcoming the journalists into her home. "She kept saying, 'Yes, sir,'" Davidson recalls. "It was kind of like, you're white, you have the power. There's a certain fear that comes from never knowing when that power is going to turn on you."

Davidson, who is 70 and ranks among America's foremost postwar photographers, has usually found people willing to let him into their lives, beginning with photographs he took in Paris in the 1950s of an elderly woman he called the Widow of Montmartre. A native of Illinois, in 1961 he joined the second Freedom Ride, led by civil rights activists determined to test a Supreme Court decision requiring that buses crossing state lines be integrated. In Anniston, Alabama, one bus was attacked and set on fire, and some of the riders were beaten. As he continued to travel, Davidson grew increasingly concerned about the "underpinnings of the civil rights movement, the migrant camps and the child laborers," he recalls, and photographed them.

Davidson (in 2001) tries to make himself invisible.

Davidson is nothing if not patient; he spent two years photographing life on a block in Spanish Harlem for his 1970 book *East 100th Street*, expanded and reissued last year. "I'm sort of able to make myself invisible," he says. "Because I'm looking, I'm not talking. I use my eyes and my other senses and make myself stealth." He adds, "You have to relate to people, and they have to begin to trust you. It takes a long time. With Miss Blackman, I was able to do something overnight, but that was a rare situation."

Davidson returned to Alabama in 2002 with a documentary film crew and managed to find some members of the Blackman family. He learned that Annie Blackman had moved out of the cabin in Trickem Fork in the 1970s and eventually into a five-bedroom house about a mile away. She remodeled the kitchen, covering the drywall with paneling, and did over a long, open-air porch, gleefully etching her name in wet concrete that the contractor poured under it. She died in 2000 at 77.

For years, she had kept a copy of the *Saturday Evening Post* with the story about her family, but then she lost it. In the mid-1980s, one of her daughters, Alma Surles, a law librarian for the Alabama Supreme Court, found the article at work and shared it with the family. It was a potent reminder of what they had lived through. "My mother was proud of the fact that her life had changed," says Felicia Blackman, now 40.

Felicia lives near Trickem Fork, works as an insurance agent and has one child, Alicya, a 16-year-old daughter. In some ways, she says, Trickem Fork is much the same. It remains decidedly rural, with a few mom and pop grocery stores, service stations and churches. In other ways, though, much *has* changed. "It was something huge that happened," Felicia says of the civil rights movement and its effects on even her own family. Alicya, who earns A's and B's in the tenth grade, is taking courses at a local university as part of a Department of Education program called Upward Bound.

For Felicia, Davidson's photographs are more than a glimpse of a time and place in the nation's history. "We never really had any photos of us while we were young, because we were pretty poor," she says. "To see those photos and see all of us, it was really touching. They're really our family photos."

*PAUL MALISZEWSKI's articles have appeared in* Harper's *and the* Paris Review.

BRUCE DAVIDSON / MAGNUM PHOTOS; EMILY DAVIDSON

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# THIS MONTH IN HISTORY

*JUNE ANNIVERSARIES—MOMENTOUS OR MERELY MEMORABLE*

**90 YEARS AGO: SHOCK WAVES**
Following a failed attempt to bomb their car, Archduke Franz Ferdinand of Austria and his wife, Sophie, are assassinated June 28, 1914, in Sarajevo by Gavrilo Princip, a Serbian nationalist. Meant to free the Balkans from Austrian dominion, Princip's shots instead precipitate a larger conflict: World War I.

**50 YEARS AGO: CURRENT EVENT**
The world's first nuclear power plant begins commercial production of electricity in Obninsk, Russia, in 1954. Known as RRPA (Research Reactor for Peaceful Atom), it runs until 2002, by which time 441 plants in 30 countries generate 16 percent of the world's electricity.

**30 YEARS AGO: ON HIS TOES**
While touring Canada in 1974, Kirov Ballet star Mikhail Baryshnikov, 26, defects from the Soviet Union to the West. "If I let the opportunity of expanding my art . . . slip by, it would haunt me always," says the dancer, whose muscular leaps bring him stardom in ballet, jazz and modern dance. He becomes a U.S. citizen in 1986 and stars in TV's "Sex and the City" in 2004.

**80 YEARS AGO: IRONIC ACT**
In an effort to bring Indians into mainstream America, President Coolidge signs an act declaring all Native Americans born in the United States to be citizens. For many of the 150,000 Indians affected, it is too little, too late. Citizenship does not mean full enfranchisement; not until 1948 will Indians be able to vote in every state.

**30 YEARS AGO: SAVE YOUR BREATH**
American chest surgeon Henry Heimlich, spurred on by the high rate of choking deaths in the United States, publishes a new technique to assist victims. The Heimlich maneuver uses pressure on the diaphragm to force air out the mouth, expelling lodged objects. A week later, the first of more than 100,000 lives (to date) is saved.

**100 YEARS AGO: MIRACLE WORKED**
Praised for her "unconquerable grit," Helen Keller, 23, graduates *cum laude* from Radcliffe College in 1904, the first blind and deaf person to earn a B.A. She has been assisted by her teacher, Anne Sullivan, who finger-spells books not available in Braille. Keller campaigns for rights for the disabled until her death in 1968 at age 87. —*ALISON MCLEAN*

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# It's different for people with acid reflux disease.

## It's not just heartburn you may have to worry about, but the threat of a damaged esophagus.

If you suffer from acid reflux disease, any food can trigger an attack of heartburn. And over time, all that churning acid could do real harm to your esophagus. So, if you've changed your diet and treated your symptoms, but the heartburn still comes back two or more days a week, ask your doctor about prescription NEXIUM.

Unlike your stomach, the lining of your esophagus offers little protection against churning acid. When acid rises into the esophagus–even if you feel only a little heartburn–it can eventually wear away the lining. This condition is called erosive esophagitis and only a doctor can determine if you have it.

That's why you should ask your doctor about NEXIUM. The Healing Purple Pill. For many, just one NEXIUM a day–along with a sensible diet and lifestyle changes–can mean 24-hour heartburn relief. And NEXIUM goes deeper, for most people healing the erosions in your esophagus caused by acid reflux disease. Most erosions heal in 4 to 8 weeks. Your results may vary.

NEXIUM has a low occurrence of side effects, the most common being headache, diarrhea, and abdominal pain. Symptom relief does not rule out serious stomach conditions.

Next time, ask your doctor about NEXIUM. The Healing Purple Pill.
**Healing Is Such A Great Feeling.**

AstraZeneca

Please read the important Product Information about NEXIUM on the following page and discuss it with your doctor.

**Visit purplepill.com today for a FREE Trial Offer**

Nexium®
(esomeprazole magnesium)

**1-800-79-NEXIUM**

Please read this summary carefully, and then ask your doctor about NEXIUM. No advertisement can provide all the information needed to prescribe a drug. This advertisement does not take the place of careful discussions with your doctor. Only your doctor has the training to weigh the risks and benefits of a prescription drug for you.

# Nexium® *(esomeprazole magnesium)*

## 20-MG, 40-MG Delayed-Release Capsules

**BRIEF SUMMARY** Before prescribing NEXIUM, please see full Prescribing Information. **INDICATIONS AND USAGE** NEXIUM is indicated for the short-term treatment (4 to 8 weeks) in the healing and symptomatic resolution of diagnostically confirmed erosive esophagitis. **CONTRAINDICATIONS** NEXIUM is contraindicated in patients with known hypersensitivity to any component of the formulation or to substituted benzimidazoles. **PRECAUTIONS** Symptomatic response to therapy with NEXIUM does not preclude the presence of gastric malignancy. Atrophic gastritis has been noted occasionally in gastric corpus biopsies from patients treated long-term with omeprazole, of which NEXIUM is an enantiomer **Information for Patients** NEXIUM Delayed-Release Capsules should be taken at least one hour before meals. For patients who have difficulty swallowing capsules, one tablespoon of applesauce can be added to an empty bowl and the NEXIUM Delayed-Release Capsule can be opened, and the pellets carefully emptied onto the applesauce. The pellets should be mixed with the applesauce and then swallowed immediately. The applesauce used should not be hot and should be soft enough to be swallowed without chewing. The pellets should not be chewed or crushed. The pellet/applesauce mixture should not be stored for future use. Antacids may be used while taking NEXIUM. **Drug Interactions** Esomeprazole is extensively metabolized in the liver by CYP2C19 and CYP3A4. *In vitro* and *in vivo* studies have shown that esomeprazole is not likely to inhibit CYPs 1A2, 2A6, 2C9, 2D6, 2E1 and 3A4. No clinically relevant interactions with drugs metabolized by these CYP enzymes would be expected. Drug interaction studies have shown that esomeprazole does not have any clinically significant interactions with phenytoin, warfarin, quinidine, clarithromycin or amoxicillin. Post-marketing reports of changes in prothrombin measures have been received among patients on concomitant warfarin and esomeprazole therapy. Increases in INR and prothrombin time may lead to abnormal bleeding and even death. Patients treated with proton pump inhibitors and warfarin concomitantly may need to be monitored for increases in INR and prothrombin time. Esomeprazole may potentially interfere with CYP2C19, the major esomeprazole metabolizing enzyme. Coadministration of esomeprazole 30 mg and diazepam, a CYP2C19 substrate, resulted in a 45% decrease in clearance of diazepam. Increased plasma levels of diazepam were observed 12 hours after dosing and onwards. However, at that time, the plasma levels of diazepam were below the therapeutic interval, and thus this interaction is unlikely to be of clinical relevance. Esomeprazole inhibits gastric acid secretion. Therefore, esomeprazole may interfere with the absorption of drugs where gastric pH is an important determinant of bioavailability (eg, ketoconazole, iron salts and digoxin). Coadministration of oral contraceptives, diazepam, phenytoin, or quinidine did not seem to change the pharmacokinetic profile of esomeprazole. **Carcinogenesis, Mutagenesis, Impairment of Fertility** The carcinogenic potential of esomeprazole was assessed using omeprazole studies. In two 24-month oral carcinogenicity studies in rats, omeprazole at daily doses of 1.7, 3.4, 13.8, 44.0 and 140.8 mg/kg/day (about 0.7 to 57 times the human dose of 20 mg/day expressed on a body surface area basis) produced gastric ECL cell carcinoids in a dose-related manner in both male and female rats; the incidence of this effect was markedly higher in female rats, which had higher blood levels of omeprazole. Gastric carcinoids seldom occur in the untreated rat. In addition, ECL cell hyperplasia was present in all treated groups of both sexes. In one of these studies, female rats were treated with 13.8 mg omeprazole/kg/day (about 5.6 times the human dose on a body surface area basis) for 1 year, then followed for an additional year without the drug. No carcinoids were seen in these rats. An increased incidence of treatment-related ECL cell hyperplasia was observed at the end of 1 year (94% treated vs 10% controls). By the second year the difference between treated and control rats was much smaller (46% vs 26%) but still showed more hyperplasia in the treated group. Gastric adenocarcinoma was seen in one rat (2%). No similar tumor was seen in male or female rats treated for 2 years. For this strain of rat no similar tumor has been noted historically, but a finding involving only one tumor is difficult to interpret. A 78-week mouse carcinogenicity study of omeprazole did not show increased tumor occurrence, but the study was not conclusive. Esomeprazole was negative in the Ames mutation test, in the *in vivo* rat bone marrow cell chromosome aberration test, and the *in vivo* mouse micronucleus test. Esomeprazole, however, was positive in the *in vitro* human lymphocyte chromosome aberration test. Omeprazole was positive in the *in vitro* human lymphocyte chromosome aberration test, the *in vivo* mouse bone marrow cell chromosome aberration test, and the *in vivo* mouse micronucleus test. The potential effects of esomeprazole on fertility and reproductive performance were assessed using omeprazole studies. Omeprazole at oral doses up to 138 mg/kg/day in rats (about 56 times the human dose on a body surface area basis) was found to have no effect on reproductive performance of parental animals. **Pregnancy** *Teratogenic Effects. Pregnancy Category B*—Teratology studies have been performed in rats at oral doses up to 280 mg/kg/day (about 57 times the human dose on a body surface area basis) and in rabbits at oral doses up to 86 mg/kg/day (about 35 times the human dose on a body surface area basis) and have revealed no evidence of impaired fertility or harm to the fetus due to esomeprazole. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed. Teratology studies conducted with omeprazole in rats at oral doses up to 138 mg/kg/day (about 56 times the human dose on a body surface area basis) and in rabbits at doses up to 69 mg/kg/day (about 56 times the human dose on a body surface area basis) did not disclose any evidence for a teratogenic potential of omeprazole. In rabbits omeprazole in a dose range of 6.9 to 69.1 mg/kg/day (about 5.5 to 56 times the human dose on a body surface area basis) produced dose-related increases in embryo-lethality, fetal resorptions, and pregnancy disruptions. In rats, dose-related embryo/fetal toxicity and postnatal developmental toxicity were observed in offspring resulting from parents treated with omeprazole at 13.8 to 138.0 mg/kg/day (about 5.6 to 56 times the human doses on a body surface area basis). There are no adequate and well-controlled studies in pregnant women. Sporadic reports have been received of congenital abnormalities occurring in infants born to women who have received omeprazole during pregnancy. **Nursing Mothers** The excretion of esomeprazole in milk has not been studied. However, omeprazole concentrations have been measured in breast milk of a woman following oral administration of 20 mg. Because esomeprazole is likely to be excreted in human milk, because of the potential for serious adverse reactions in nursing infants from esomeprazole, and because of the potential for tumorigenicity shown for omeprazole in rat carcinogenicity studies, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother. **Pediatric Use** Safety and effectiveness in pediatric patients have not been established. **Geriatric Use** Of the total number of patients who received NEXIUM in clinical trials, 778 were 65 to 74 years of age and 124 patients were ≥ 75 years of age. No overall differences in safety and efficacy were observed between the elderly and younger individuals and other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out. **ADVERSE REACTIONS** The safety of NEXIUM was evaluated in over 10,000 patients (aged 18-84 years) in clinical trials worldwide including over 7,400 patients in the United States and over 2,600 patients in Europe and Canada. Over 2,900 patients were treated in long-term studies for up to 6-12 months. In general, NEXIUM was well tolerated in both short- and long-term clinical trials. The safety in the treatment of healing of erosive esophagitis was assessed in four randomized comparative clinical trials, which included 1,240 patients on NEXIUM 20 mg, 2,434 patients on NEXIUM 40 mg, and 3,008 patients on omeprazole 20 mg daily. The most frequently occurring adverse events (≥1%) in all three groups was headache (5.5, 5.0, and 3.8, respectively) and diarrhea (no difference among the three groups). Nausea, flatulence, abdominal pain, constipation, and dry mouth occurred at similar rates among patients taking NEXIUM or omeprazole. Additional adverse events that were reported as possibly or probably related to NEXIUM with an incidence < 1% are listed below by body system: ***Body as a Whole:*** abdomen enlarged, allergic reaction, asthenia, back pain, chest pain, chest pain substernal, facial edema, peripheral edema, hot flushes, fatigue, fever, flu-like disorder, generalized edema, leg edema, malaise, pain, rigors; ***Cardiovascular:*** flushing, hypertension, tachycardia; ***Endocrine:*** goiter; ***Gastrointestinal:*** bowel irregularity, constipation aggravated, dyspepsia, dysphagia, dysplasia GI, epigastric pain, eructation, esophageal disorder, frequent stools, gastroenteritis, GI hemorrhage, GI symptoms not otherwise specified, hiccup, melena, mouth disorder, pharynx disorder, rectal disorder, serum gastrin increased, tongue disorder, tongue edema, ulcerative stomatitis, vomiting; ***Hearing:*** earache, tinnitus; ***Hematologic:*** anemia, anemia hypochromic, cervical lymphadenopathy, epistaxis, leukocytosis, leukopenia, thrombocytopenia; ***Hepatic:*** bilirubinemia, hepatic function abnormal, SGOT increased, SGPT increased; ***Metabolic/Nutritional:*** glycosuria, hyperuricemia, hyponatremia, increased alkaline phosphatase, thirst, vitamin B12 deficiency, weight increase, weight decrease; ***Musculoskeletal:*** arthralgia, arthritis aggravated, arthropathy, cramps, fibromyalgia syndrome, hernia, polymyalgia rheumatica; ***Nervous System/Psychiatric:*** anorexia, apathy, appetite increased, confusion, depression aggravated, dizziness, hypertonia, nervousness, hypoesthesia, impotence, insomnia, migraine, migraine aggravated, paresthesia, sleep disorder, somnolence, tremor, vertigo, visual field defect; ***Reproductive:*** dysmenorrhea, menstrual disorder, vaginitis; ***Respiratory:*** asthma aggravated, coughing, dyspnea, larynx edema, pharyngitis, rhinitis, sinusitis; ***Skin and Appendages:*** acne, angioedema, dermatitis, pruritus, pruritus ani, rash, rash erythematous, rash maculo-papular, skin inflammation, sweating increased, urticaria; ***Special Senses:*** otitis media, parosmia, taste loss, taste perversion; ***Urogenital:*** abnormal urine, albuminuria, cystitis, dysuria, fungal infection, hematuria, micturition frequency, monilias genital moniliasis, polyuria; ***Visual:*** conjunctivitis, vision abnormal. Endoscopic findings that were reported as adverse events include: duodenitis, esophagitis, esophageal stricture, esophageal ulceration, esophageal varices, gastric ulcer, gastritis, hernia, benign polyps or nodules, Barrett's esophagus, and mucosal discoloration. Postmarketing Reports – There have been spontaneous reports of adverse events with postmarketing use of esomeprazole. These reports have included rare cases of anaphylactic reaction. Other adverse events not observed with NEXIUM but occurring with omeprazole can be found in the omeprazole package insert, **ADVERSE REACTIONS** section. **OVERDOSAGE** A single oral dose of esomeprazole at 510 mg/kg (about 103 times the human dose on a body surface area basis), was lethal to rats. The major signs of acute toxicity were reduced motor activity, changes in respiratory frequency, tremor, ataxia, and intermittent clonic convulsions. There have been some reports of overdosage with esomeprazole. Reports have been received of overdosage with omeprazole in humans. Doses ranged up to 2,400 mg (120 times the usual recommended clinical dose). Manifestations were variable, but included confusion, drowsiness, blurred vision, tachycardia, nausea, diaphoresis, flushing, headache, dry mouth, and other adverse reactions similar to those seen in normal clinical experience (see omeprazole package insert-**ADVERSE REACTIONS**). No specific antidote for esomeprazole is known. Since esomeprazole is extensively protein bound, it is not expected to be removed by dialysis. In the event of overdosage, treatment should be symptomatic and supportive. As with the management of any overdose, the possibility of multiple drug ingestion should be considered. For current information on treatment of any drug overdose, a certified Regional Poison Control Center should be contacted. Telephone numbers are listed in the Physicians' Desk Reference (PDR) or local telephone book.

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uno, dos, tres

un, deux, trois

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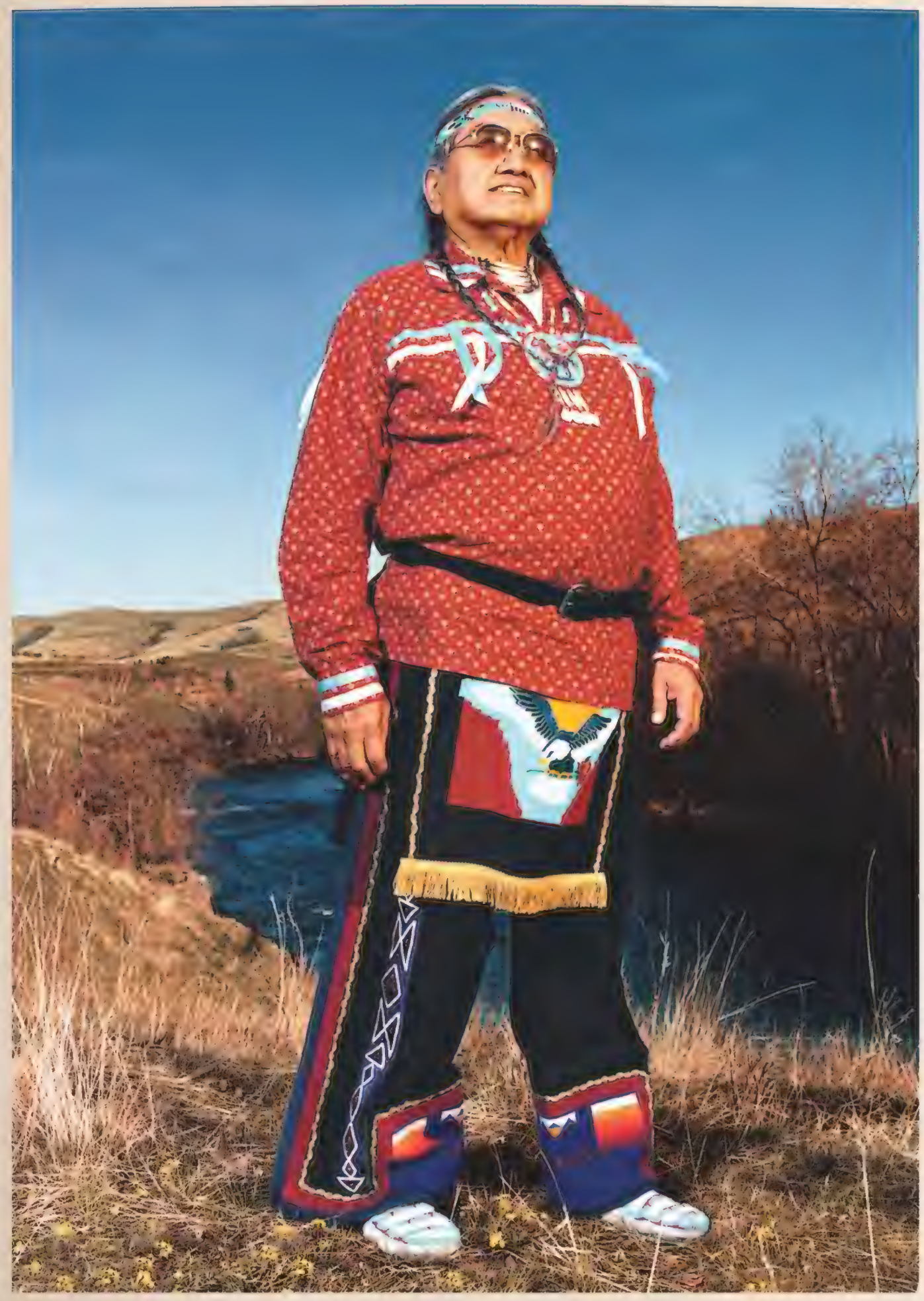

# THE OREGON CONSERVATIONIST

## SUPPOSE A RIVER DRIES UP AND TAKES BEAUTIFUL SALMON WITH IT, AND SUPPOSE THERE'RE LOTS OF PEOPLE WHO REALLY CARE ABOUT THEIR RIVERS AND THEIR SALMON AND WILL DO ANYTHING TO BRING THEM BACK—EVEN FORGET THEIR DIFFERENCES—WELL THEN YOU'D BE TALKING ABOUT THE PEOPLE IN OREGON AND HERE'S THEIR STORY.

Once upon a time there was an Indian tribe who lived in synch with the cycle of the Umatilla River in Oregon. For thousands of years, the river told them when to hunt deer, when to pick huckleberries, when to dig for roots—the river was very bossy. But the most important thing the river did was fill up with big, beautiful salmon. But one day the river began to quiet down and eventually the salmon disappeared. So the Umatilla Tribe did what every good Oregonian would and set out to bring back their river. They went to the nearby farmers who had been using water from the river for their crops and asked for their help. Now, they could have argued back and forth about whose water it was but of course they both knew that if one had fish and the other did not have crops, the fish would not taste truly satisfying. And if one had crops and the other did not have fish, the crops would not grow so proudly. So they instead did things the Oregonian way: They worked together and didn't stop until they found a solution. And now when you visit the Umatilla in Oregon, you will hear the river barking orders loudly once again—along with occasional whispers of, "It's good to be back."

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# Magical Mystery Tour

*In 1964 a psychedelic placard heralded the arrival of counterculture guru Ken Kesey and his entourage to America's cities* – BY OWEN EDWARDS

THE MOMENT he saw the signboard in 1992, National Museum of American History curator Bill Yeingst knew that he had uncovered a watershed artifact of the 1960s. In the company of novelist and counterculture guru Ken Kesey (author of 1962's *One Flew Over the Cuckoo's Nest*), Yeingst had turned up an old 3- by 5 ½-foot wooden panel painted in psychedelic colors. It had announced the arrival of Kesey and his traveling companions, the Merry Pranksters, when their bus rolled into towns and cities across America in the mid-1960s.

Yeingst had made his way to Kesey's Oregon farm in search of an even more numinous '60s talisman, the 1939 International Harvester school bus in which Kesey and the Pranksters journeyed from coast to coast, preaching a gospel of transformation—political as well as social—through sex, drugs and rock 'n' roll. As Kesey, who died in 2001 at 66, once put it, "What we hoped was that we could stop the coming end of the world."

By the time he bought the bus in the spring of 1964 and painted it in Day-Glo colors, Kesey was a well-known author, whose second novel, *Sometimes a Great Notion*, would be released that summer. He had already gathered around him a group of about a dozen friends and acolytes (including Neal Cassady, who was the model for a main character in Jack Kerouac's *On the Road*). In June, Kesey and his entourage embarked on an epic, month-long journey from his home in La Honda, California, to New York City.

[ *Merry Pranksters' signboard*
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"We hoped [to] stop the coming end of the world," Kesey said.

Author of *One Flew Over the Cuckoo's Nest*, Kesey (center, with Neal Cassady, also shirtless, in San Francisco, 1966) urged LSD use, then recanted and resumed writing.

During that drive, documented in part by journalist Tom Wolfe in his 1968 book *The Electric Kool-Aid Acid Test*, and on many an odyssey thereafter, the Merry Pranksters performed street theater and took part in group LSD sessions. Outrageously dressed, antic and idealistic, the group offered a living blueprint for the San Francisco hippie culture that would reach its apotheosis in the 1967 Summer of Love and spread quickly across the country. Some have said that Kesey (with a little help from the Beatles) and his bus, christened "Further," invented the '60s.

Yeingst, who had been in touch with the author for a period of months, had high hopes of acquiring the bus when he showed up at Kesey's home in Pleasant Hill, Oregon. Accompanied by a colleague, archivist John Fleckner, he spotted Kesey driving a tractor pulling a hay wagon. The two visitors soon found themselves riding the wagon, tossing out bales for Kesey's cattle. But once they got a look at Further, a crestfallen Yeingst and Fleckner quickly realized that the challenges of restoring the bus, which was in a decrepit condition, as well as transporting, storing and exhibiting it, would amount to a major undertaking.

Always on the hunt for "ordinary things that helped shape American history," Yeingst wasn't prepared to leave empty handed. After they described their quest for an object that would evoke the psychedelic pilgrimages of the '60s, Kesey took them to the loft of a chicken coop and pointed out the Merry Pranksters signboard. Even in the loft's dim light, Yeingst recognized its significance. With its hallucinogenic graphics and double-entendre slogan—"can you pass the Acid Test?"—the sign symbolized the beginning of the Age of Aquarius no less dramatically than the bus itself.

In their bus, Kesey's Merry Pranksters took their counterculture show on the road.

Although Kesey's espousal of the drug culture was ultimately perceived as a threat to law and order and the author was arrested and prosecuted for possession of marijuana, his introduction to hallucinogenic drugs had been entirely innocent. In 1959, while a graduate student in a writing program at Stanford University, Kesey volunteered for a government-funded research project. He was given LSD (which was legal at the time), mescaline and other mind-altering substances and asked to write reports about the various drugs' effects. These controlled but disorienting experiments conducted in a clinical setting, along with Kesey's work as a part-time orderly at a VA hospital, provided the template for *Cuckoo's Nest*, in which the main character, Randle Patrick McMurphy (played in the 1975 movie version by Jack Nicholson), tries to organize the inmates of a mental ward to resist Nurse Ratched (a stand-in for governmental authority) and is finally silenced with a lobotomy. By the time Kesey was arrested, he had renounced his earlier belief in the power of LSD to bring about positive change. After serving a sentence of six months, he and his wife, Faye, and their three children settled on his Oregon farm where he raised cattle and sheep.

Some wag once wrote that anyone who could remember the '60s probably wasn't there. Those of us who were there, and remember the decade vividly, will disagree. But for generations born later, the significance of a tumultuous time when America changed forever (whether for the better or worse depends on one's point of view) can begin to seem more an unfortunate fashion phenomenon than a profound shifting of social and political tectonic plates. As decades pass, a simple object like the Merry Pranksters panel—literally a sign of the times—rescued from a chicken coop in Oregon, has transformed into history itself.

*OWEN EDWARDS is a freelance writer who lives in San Francisco.*

TED STRESHINSKY / CORBIS (2)

**Important information:**

LIPITOR® (atorvastatin calcium) is a prescription drug. It is used with a low-fat diet to lower cholesterol.

LIPITOR is not for everyone. It is not for those with liver problems. And it is not for women who are nursing, pregnant, or may get pregnant. It has not been shown to prevent heart disease or heart attacks.

If you take LIPITOR, tell your doctor if you feel any new muscle pain or weakness. This could be a sign of serious muscle side effects. Tell your doctor about all the medicines you take. This may help avoid serious drug interactions. Your doctor should do blood tests to check your liver function before and during treatment and may adjust your dose. The most common side effects are gas, constipation, stomach pain, and heartburn. They tend to be mild and often go away.

*Please see additional important information on next page.*

Why not help reduce one of your risk factors for heart disease. Like high cholesterol, for example. You can eat right. You can exercise. But for many people diet and exercise may not be enough. In fact, 2 out of 3 adults with high cholesterol may need medicine. The good news is that adding LIPITOR can help. It can help lower your total cholesterol 29% to 45%.* And it can help lower your bad cholesterol 39% to 60%.* (*The average effect depends on the dose.) Talk to your doctor today. Find out if LIPITOR is right for you. And why it is the most prescribed medicine of its kind. Call us at 1-888-LIPITOR or find us on the web at www.lipitor.com.

Go Red for women

LIPITOR®
atorvastatin calcium
tablets
FOR CHOLESSTEROL®

# LIPITOR® (Atorvastatin Calcium) Tablets

## Brief Summary of Prescribing Information

**CONTRAINDICATIONS:** Active liver disease or unexplained persistent elevations of serum transaminases. Hypersensitivity to any component of this medication. **Pregnancy and Lactation** — Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. ATORVASTATIN SHOULD BE ADMINISTERED TO WOMEN OF CHILDBEARING AGE ONLY WHEN SUCH PATIENTS ARE HIGHLY UNLIKELY TO CONCEIVE AND HAVE BEEN INFORMED OF THE POTENTIAL HAZARDS. If the patient becomes pregnant while taking this drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

**WARNINGS: Liver Dysfunction** — HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. **Persistent elevations (>3 times the upper limit of normal [ULN] occurring on 2 or more occasions) in serum transaminases occurred in 0.7% of patients who received atorvastatin in clinical trials. The incidence of these abnormalities was 0.2%, 0.2%, 0.6%, and 2.3% for 10, 20, 40, and 80 mg, respectively.** One patient in clinical trials developed jaundice. Increases in liver function tests (LFT) in other patients were not associated with jaundice or other clinical signs or symptoms. Upon dose reduction, drug interruption, or discontinuation, transaminase levels returned to or near pretreatment levels without sequelae. Eighteen of 30 patients with persistent LFT elevations continued treatment with a reduced dose of atorvastatin. **It is recommended that liver function tests be performed prior to and at 12 weeks following both the initiation of therapy and any elevation of dose, and periodically (eg, semiannually) thereafter.** Liver enzyme changes generally occur in the first 3 months of treatment with atorvastatin. Patients who develop increased transaminase levels should be monitored until the abnormalities resolve. Should an increase in ALT or AST of >3 times ULN persist, reduction of dose or withdrawal of atorvastatin is recommended. Atorvastatin should be used with caution in patients who consume substantial quantities of alcohol and/or have a history of liver disease. Active liver disease or unexplained persistent transaminase elevations are contraindications to the use of atorvastatin (see CONTRAINDICATIONS). **Skeletal Muscle — Rare cases of rhabdomyolysis with acute renal failure secondary to myoglobinuria have been reported with atorvastatin and with other drugs in this class.** Uncomplicated myalgia has been reported in atorvastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aches or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values >10 times ULN, should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. Atorvastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. The risk of myopathy during treatment with drugs in this class is increased with concurrent administration of cyclosporine, fibric acid derivatives, erythromycin, niacin, or azole antifungals. Physicians considering combined therapy with atorvastatin and fibric acid derivatives, erythromycin, immunosuppressive drugs, azole antifungals, or lipid-lowering doses of niacin should carefully weigh the potential benefits and risks and should carefully monitor patients for any signs or symptoms of muscle pain, tenderness, or weakness, particularly during the initial months of therapy and during any periods of upward dosage titration of either drug. Periodic creatine phosphokinase (CPK) determinations may be considered in such situations, but there is no assurance that such monitoring will prevent the occurrence of severe myopathy. **Atorvastatin therapy should be temporarily withheld or discontinued in any patient with an acute, serious condition suggestive of a myopathy or having a risk factor predisposing to the development of renal failure secondary to rhabdomyolysis (eg, severe acute infection, hypotension, major surgery, trauma, severe metabolic, endocrine and electrolyte disorders, and uncontrolled seizures).**

**PRECAUTIONS: General** — Before instituting therapy with atorvastatin, an attempt should be made to control hypercholesterolemia with appropriate diet, exercise, and weight reduction in obese patients, and to treat other underlying medical problems (see INDICATIONS AND USAGE in full prescribing information). **Information for Patients** — Patients should be advised to report promptly unexplained muscle pain, tenderness, or weakness, particularly if accompanied by malaise or fever. **Drug Interactions** — The risk of myopathy during treatment with drugs of this class is increased with concurrent administration of cyclosporine, fibric acid derivatives, niacin (nicotinic acid), erythromycin, azole antifungals (see WARNINGS, Skeletal Muscle). ***Antacid:*** When atorvastatin and Maalox® TC suspension were coadministered, plasma concentrations of atorvastatin decreased approximately 35%. However, LDL-C reduction was not altered. ***Antipyrine:*** Because atorvastatin does not affect the pharmacokinetics of antipyrine, interactions with other drugs metabolized via the same cytochrome isozymes are not expected. ***Colestipol:*** Plasma concentrations of atorvastatin decreased approximately 25% when colestipol and atorvastatin were coadministered. However, LDL-C reduction was greater when atorvastatin and colestipol were coadministered than when either drug was given alone. ***Cimetidine:*** Atorvastatin plasma concentrations and LDL-C reduction were not altered by coadministration of cimetidine. ***Digoxin:*** When multiple doses of atorvastatin and digoxin were coadministered, steady-state plasma digoxin concentrations increased by approximately 20%. Patients taking digoxin should be monitored appropriately. ***Erythromycin:*** In healthy individuals, plasma concentrations of atorvastatin increased approximately 40% with coadministration of atorvastatin and erythromycin, a known inhibitor of cytochrome P450 3A4 (see WARNINGS, Skeletal Muscle). ***Oral Contraceptives:*** Coadministration of atorvastatin and an oral contraceptive increased AUC values for norethindrone and ethinyl estradiol by approximately 30% and 20%. These increases should be considered when selecting an oral contraceptive for a woman taking atorvastatin. ***Warfarin:*** Atorvastatin had no clinically significant effect on prothrombin time when administered to patients receiving chronic warfarin treatment. **Endocrine Function** — HMG-CoA reductase inhibitors interfere with cholesterol synthesis and theoretically might blunt adrenal and/or gonadal steroid production. Clinical studies have shown that atorvastatin does not reduce basal plasma cortisol concentration or impair adrenal reserve. The effects of HMG-CoA reductase inhibitors on male fertility have not been studied in adequate numbers of patients. The effects, if any, on the pituitary-gonadal axis in premenopausal women are unknown. Caution should be exercised if an HMG-CoA reductase inhibitor is administered concomitantly with drugs that may decrease the levels or activity of endogenous steroid hormones, such as ketoconazole, spironolactone, and cimetidine. **CNS Toxicity** — Brain hemorrhage was seen in a female dog treated for 3 months at 120 mg/kg/day. Brain hemorrhage and optic nerve vacuolation were seen in another female dog that was sacrificed in moribund condition after 11 weeks of escalating doses up to 280 mg/kg/day. The 120 mg/kg dose resulted in a systemic exposure approximately 16 times the human plasma area-under-the-curve (AUC, 0-24 hours) based on the maximum human dose of 80 mg/day. A single tonic convulsion was seen in each of 2 male dogs (one treated at 10 mg/kg/day and one at 120 mg/kg/day) in a 2-year study. No CNS lesions have been observed in mice after chronic treatment for up to 2 years at doses up to 400 mg/kg/day or in rats at doses up to 100 mg/kg/day. These doses were 6 to 11 times (mouse) and 8 to 16 times (rat) the human AUC (0-24) based on the maximum recommended human dose of 80 mg/day. CNS vascular lesions, characterized by perivascular hemorrhages, edema, and mononuclear cell infiltration of perivascular spaces, have been observed in dogs treated with other members of this class. A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion at a dose that produced plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose. **Carcinogenesis, Mutagenesis, Impairment of Fertility** — In a 2-year carcinogenicity study in rats at dose levels of 10, 30, and 100 mg/kg/day, 2 rare tumors were found in muscle in high-dose females: in one, there was a rhabdomyosarcoma and, in another, there was a fibrosarcoma. This dose represents a plasma AUC (0-24) value of approximately 16 times the mean human plasma drug exposure after an 80 mg oral dose. A 2-year carcinogenicity study in mice given 100, 200, or 400 mg/kg/day resulted in a significant increase in liver adenomas in high-dose males and liver carcinomas in high-dose females. These findings occurred at plasma AUC (0-24) values of approximately 6 times the mean human plasma drug exposure after an 80 mg oral dose. *In vitro*, atorvastatin was not mutagenic or clastogenic in the following tests with and without metabolic activation: the Ames test with *Salmonella typhimurium* and *Escherichia coli*, the HGPRT forward mutation assay in Chinese hamster lung cells, and the chromosomal aberration assay in Chinese hamster lung cells. Atorvastatin was negative in the *in vivo* mouse micronucleus test. Studies in rats performed at doses up to 175 mg/kg (15 times the human exposure) produced no changes in fertility. There was aplasia and aspermia in the epididymis of 2 of 10 rats treated with 100 mg/kg/day of atorvastatin for 3 months (16 times the human AUC at the 80 mg dose); testis weights were significantly lower at 30 and 100 mg/kg and epididymal weight was lower at 100 mg/kg. Male rats given 100 mg/kg/day for 11 weeks prior to mating had decreased sperm motility, spermatid head concentration, and increased abnormal sperm. Atorvastatin caused no adverse effects on semen parameters, or reproductive organ histopathology in dogs given doses of 10, 40, or 120 mg/kg for two years. **Pregnancy — Pregnancy Category X: See CONTRAINDICATIONS.** Safety in pregnant women has not been established. Atorvastatin crosses the rat placenta and reaches a level in fetal liver equivalent to that of maternal plasma. Atorvastatin was not teratogenic in rats at doses up to 300 mg/kg/day or in rabbits at doses up to 100 mg/kg/day. These doses resulted in multiples of about 30 times (rat) or 20 times (rabbit) the human exposure based on surface area (mg/m$^2$). In a study in rats given 20, 100, or 225 mg/kg/day, from gestation day 7 through to lactation day 21 (weaning), there was decreased pup survival at birth, neonate, weaning, and maturity in pups of mothers dosed with 225 mg/kg/day. Body weight was decreased on days 4 and 21 in pups of mothers dosed at 100 mg/kg/day; pup body weight was decreased at birth and at days 4, 21, and 91 at 225 mg/kg/day. Pup development was delayed (rotorod performance at 100 mg/kg/day and acoustic startle at 225 mg/kg/day; pinnae detachment and eye opening at 225 mg/kg/day). These doses correspond to 6 times (100 mg/kg) and 22 times (225 mg/kg) the human AUC at 80 mg/day. Rare reports of congenital anomalies have been received following intrauterine exposure to HMG-CoA reductase inhibitors. There has been one report of severe congenital bony deformity, tracheo-esophageal fistula, and anal atresia (VATER association) in a baby born to a woman who took lovastatin with dextroamphetamine sulfate during the first trimester of pregnancy. LIPITOR should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking LIPITOR, it should be discontinued and the patient advised again as to the potential hazards to the fetus. **Nursing Mothers** — Nursing rat pups had plasma and liver drug levels of 50% and 40%, respectively, of that in their mother's milk. Because of the potential for adverse reactions in nursing infants, women taking LIPITOR should not breast-feed (see CONTRAINDICATIONS). **Pediatric Use** — Safety and effectiveness in patients 10-17 years of age with heterozygous familial hypercholesterolemia have been evaluated in a controlled clinical trial of 6 months duration in adolescent boys and postmenarchal girls. Patients treated with LIPITOR had an adverse experience profile generally similar to that of patients treated with placebo, the most common adverse experiences observed in both groups, regardless of causality assessment, were infections. **Doses greater than 20 mg have not been studied in this patient population.** In this limited controlled study, there was no detectable effect on growth or sexual maturation in boys or on menstrual cycle length in girls (see CLINICAL PHARMACOLOGY, Clinical Studies section in full prescribing information; ADVERSE REACTIONS, Pediatric Patients (ages 10-17 years); and DOSAGE AND ADMINISTRATION, Heterozygous Familial Hypercholesterolemia in Pediatric Patients (10-17 years of age) in full prescribing information. Adolescent females should be counseled on appropriate contraceptive methods while on LIPITOR therapy (see CONTRAINDICATIONS and PRECAUTIONS, Pregnancy). **LIPITOR has not been studied in controlled clinical trials involving pre-pubertal patients or patients younger than 10 years of age.** Clinical efficacy with doses up to 80 mg/day for 1 year have been evaluated in an uncontrolled study of patients with homozygous FH including 8 pediatric patients (see CLINICAL PHARMACOLOGY, *Clinical Studies: Homozygous Familial Hypercholesterolemia* in full prescribing information). **Geriatric Use** — The safety and efficacy of atorvastatin (10-80 mg) in the geriatric population (≥65 years of age) was evaluated in the ACCESS study. In this 54-week open-label trial 1,958 patients initiated therapy with atorvastatin 10 mg. Of these, 835 were elderly (≥65 years) and 1,123 were non-elderly. The mean change in LDL-C from baseline after 6 weeks of treatment with atorvastatin 10 mg was -38.2% in the elderly patients versus -34.6% in the non-elderly group. The rates of discontinuation due to adverse events were similar between the two age groups. There were no differences in clinically relevant laboratory abnormalities between the age groups.

**ADVERSE REACTIONS:** LIPITOR is generally well-tolerated. Adverse reactions have usually been mild and transient. In controlled clinical studies of 2502 patients, <2% of patients were discontinued due to adverse experiences attributable to atorvastatin. The most frequent adverse events thought to be related to atorvastatin were constipation, flatulence, dyspepsia, and abdominal pain. **Clinical Adverse Experiences** — Adverse experiences reported in ≥2% of patients in placebo-controlled clinical studies of atorvastatin, regardless of causality assessment, are shown in the following table.

**Adverse Events in Placebo-Controlled Studies (% of Patients)**

| BODY SYSTEM<br>Adverse Event | Placebo<br>N = 270 | Atorvastatin<br>10 mg<br>N = 863 | Atorvastatin<br>20 mg<br>N = 36 | Atorvastatin<br>40 mg<br>N = 79 | Atorvastatin<br>80 mg<br>N = 94 |
|---|---|---|---|---|---|
| **BODY AS A WHOLE** | | | | | |
| Infection | 10.0 | 10.3 | 2.8 | 10.1 | 7.4 |
| Headache | 7.0 | 5.4 | 16.7 | 2.5 | 6.4 |
| Accidental Injury | 3.7 | 4.2 | 0.0 | 1.3 | 3.2 |
| Flu Syndrome | 1.9 | 2.2 | 0.0 | 2.5 | 3.2 |
| Abdominal Pain | 0.7 | 2.8 | 0.0 | 3.8 | 2.1 |
| Back Pain | 3.0 | 2.8 | 0.0 | 3.8 | 1.1 |
| Allergic Reaction | 2.6 | 0.9 | 2.8 | 1.3 | 0.0 |
| Asthenia | 1.9 | 2.2 | 0.0 | 3.8 | 0.0 |
| **DIGESTIVE SYSTEM** | | | | | |
| Constipation | 1.8 | 2.1 | 0.0 | 2.5 | 1.1 |
| Diarrhea | 1.5 | 2.7 | 0.0 | 3.8 | 5.3 |
| Dyspepsia | 4.1 | 2.3 | 2.8 | 1.3 | 2.1 |
| Flatulence | 3.3 | 2.1 | 2.8 | 1.3 | 1.1 |
| **RESPIRATORY SYSTEM** | | | | | |
| Sinusitis | 2.6 | 2.8 | 0.0 | 2.5 | 6.4 |
| Pharyngitis | 1.5 | 2.5 | 0.0 | 1.3 | 2.1 |
| **SKIN AND APPENDAGES** | | | | | |
| Rash | 0.7 | 3.9 | 2.8 | 3.8 | 1.1 |
| **MUSCULOSKELETAL SYSTEM** | | | | | |
| Arthralgia | 1.5 | 2.0 | 0.0 | 5.1 | 0.0 |
| Myalgia | 1.1 | 3.2 | 5.6 | 1.3 | 0.0 |

The following adverse events were reported, regardless of causality assessment in patients treated with atorvastatin in clinical trials. The events in italics occurred in ≥2% of patients and the events in plain type occurred in <2% of patients.

***Body as a Whole:*** *Chest pain*, face edema, fever, neck rigidity, malaise, photosensitivity reaction, generalized edema. ***Digestive System:*** *Nausea*, gastroenteritis, liver function tests abnormal, colitis, vomiting, gastritis, dry mouth, rectal hemorrhage, esophagitis, eructation, glossitis, mouth ulceration, anorexia, increased appetite, stomatitis, biliary pain, cheilitis, duodenal ulcer, dysphagia, enteritis, melena, gum hemorrhage, stomach ulcer, tenesmus, ulcerative stomatitis, hepatitis, pancreatitis, cholestatic jaundice. ***Respiratory System:*** *Bronchitis, rhinitis*, pneumonia, dyspnea, asthma, epistaxis. ***Nervous System:*** *Insomnia, dizziness*, paresthesia, somnolence, amnesia, abnormal dreams, libido decreased, emotional lability, incoordination, peripheral neuropathy, torticollis, facial paralysis, hyperkinesia, depression, hypesthesia, hypertonia. ***Musculoskeletal System:*** *Arthritis*, leg cramps, bursitis, tenosynovitis, myasthenia, tendinous contracture, myositis. ***Skin and Appendages:*** Pruritus, contact dermatitis, alopecia, dry skin, sweating, acne, urticaria, eczema, seborrhea, skin ulcer. ***Urogenital System:*** *Urinary tract infection*, urinary frequency, cystitis, hematuria, impotence, dysuria, kidney calculus, nocturia, epididymitis, fibrocystic breast, vaginal hemorrhage, albuminuria, breast enlargement, metrorrhagia, nephritis, urinary incontinence, urinary retention, urinary urgency, abnormal ejaculation, uterine hemorrhage. ***Special Senses:*** Amblyopia, tinnitus, dry eyes, refraction disorder, eye hemorrhage, deafness, glaucoma, parosmia, taste loss, taste perversion. ***Cardiovascular System:*** Palpitation, vasodilatation, syncope, migraine, postural hypotension, phlebitis, arrhythmia, angina pectoris, hypertension. ***Metabolic and Nutritional Disorders:*** *Peripheral edema*, hyperglycemia, creatine phosphokinase increased, gout, weight gain, hypoglycemia. ***Hemic and Lymphatic System:*** Ecchymosis, anemia, lymphadenopathy, thrombocytopenia, petechia. **Postintroduction Reports** — Adverse events associated with LIPITOR therapy reported since market introduction, that are not listed above, regardless of causality assessment, include the following: anaphylaxis, angioneurotic edema, bullous rashes (including erythema multiforme, Stevens-Johnson syndrome, and toxic epidermal necrolysis), and rhabdomyolysis. **Pediatric Patients (ages 10-17 years)** In a 26-week controlled study in boys and postmenarchal girls (n=140), the safety and tolerability profile of LIPITOR 10 to 20 mg daily was generally similar to that of placebo (see CLINICAL PHARMACOLOGY, *Clinical Studies section* in full prescribing information and PRECAUTIONS, *Pediatric Use*).

**OVERDOSAGE:** There is no specific treatment for atorvastatin overdosage. In the event of an overdose, the patient should be treated symptomatically, and supportive measures instituted as required. Due to extensive drug binding to plasma proteins, hemodialysis is not expected to significantly enhance atorvastatin clearance.

**Please see full prescribing information for additional information about LIPITOR.**

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# Bumpy Road to Mars

*The president envisions a future human mission to Mars, but medical researchers say surviving the journey is no spacewalk* ~ BY JANE ELLEN STEVENS

Astronauts headed to Mars and back would face medical risks, from cancer to malnutrition, caused by the roughly three-year trip.

PAT RAWLINGS / SAIC / NASA

ON THE DAY THIS PAST JANUARY that President Bush was scheduled to announce a major new space policy, more than 100 scientists jammed into the Grandstand Sports Bar in Montgomery, Texas, to watch the address. They had been waiting years for this moment, but even when the president mentioned plans for a Moon base by 2020, to be followed by "human missions to Mars and to worlds beyond," the scientists didn't cheer. "The reaction was serious," recalls John Charles, a biophysicist who was in the crowd. "It was more like, '*we've got an awful lot of work to do*.'"

This group of physiologists, biochemists, physicists, psychologists and physicians from around the nation (who happened to be at a conference in Montgomery) has been working on a challenge perhaps even more daunting than constructing a spacecraft to carry astronauts up to 498 million miles to Mars and back: getting them home alive and well.

In 1997, experts at NASA and at the National Space Biomedical Research Institute, a Houston-based consortium of university and national labs, set out to identify the health problems engendered by such a journey, which would take about three years, round trip. They've identified 55 threats, from radiation-induced cancers to depression. Some problems, like malnutrition (how to store enough water and grow a three-year supply of food), won't be impossible to solve, the scientists predict. Other challenges, though, are so complex as to provide fodder for critics who insist that prolonged space exploration is better suited to robots than people.

The record for the longest stay in space belongs to Russian medical specialist Valery Polyakov, who spent 438 days aboard the Russian station *Mir*, which was launched in 1986 and decommissioned in 2001. The International Space Station, run by a partnership of 16 nations including the United States, Canada, Russia and Japan, was first occupied in 2000 and has housed nine expeditions for stays up to 195 days.

One of the biggest problems confronting people who spend more than a month or two in space is the potentially

devastating loss of bone tissue, which could result in fractures. On Earth, bone tissue, stimulated by the pulling and pushing of muscles acting against gravity, normally cranks out new bone cells. But in the microgravity of space, beyond the reach of Earth's and Mars's gravitational fields, the breakdown of bone tissue accelerates while new production slows, resulting in dangerously thinned and fragile bones.

For years, scientists have measured astronauts' bone density and also conducted studies in which Earth-bound volunteers spent weeks lying in bed, to simulate how muscles go slack in microgravity. Linda Shackelford, a physician who heads the Johnson Space Center's bone and muscle lab, says the researchers working on the problem have made progress. One way to slow bone loss in space, the evidence suggests, is exercising with a machine that generates some of the resistance that gravity typically provides. NASA put a prototype of the exercise machine on the International Space Station for its first mission. Astronaut Bill Shepherd, who spent nearly five months in the station, until March 2001, worked out with that machine six days a week for up to 45 minutes a day. "He looked pretty good when he came back," Shackelford says, adding that medical tests showed that space station astronauts who used the machine have generally experienced less bone loss in the spine, hip and pelvis than *Mir* cosmonauts. NASA scientists are also studying whether astronauts might benefit from the drug alendronate, which slows the breakdown of bone tissue and is routinely prescribed to women on Earth with osteoporosis.

Physical problems are not the only kind Mars astronauts face. For most of NASA's 46-year history, the agency has downplayed emotional woes. And the fliers themselves, beginning with the can-do Mercury astronauts, the first Americans to orbit Earth (between 1961 and 1963), tended to be close-mouthed about psychological troubles. Though NASA set up a Behavior and Performance Laboratory in 1984, it

For most of NASA's history, the agency has downplayed the astronauts' emotional woes, as have the fliers themselves.

Exercise (Edward Lu works out on the International Space Station in July 2003) has reduced bone loss in space.

wasn't until 1995, when U.S. astronaut Norm Thagard spent 115 days on *Mir* with two Russian cosmonauts, that U.S. space officials publicly acknowledged that astronauts needed additional training for the psychological challenges of long spells in space.

During his stay on *Mir*, Thagard, a physician and engineer who had flown four shuttle missions, repeatedly told ground controllers that he wanted to speak with his family and colleagues more than once a week, as he'd been doing, and that he felt isolated. Poor planning by NASA and the Russian space agency kept him from conducting most of his experiments, putting him at loose ends. He lost 13 pounds because he didn't much like the Russian food—soups, jellied meats and fish. After returning to Earth, he told reporters that if the mission had been extended another three months, he might not have made it.

Other astronauts also had difficulties on *Mir*. Some quarreled with cosmonauts. Others couldn't sleep for long periods or sank into depression and refused to speak to mission controllers or fellow fliers. Many cosmonauts complained that mission controllers were too demanding. In 1997, cosmonaut Vasily Tsibliev, exhausted after four months in space, lost control of an approaching unmanned supply ship that rammed into *Mir*, cracked its hull and sent the station into a slow spin that took days to stop.

Given the occasional need for a reality check in space, where a voice delay of up to nearly half an hour might preclude talk therapy with a psychologist on Earth, researchers at the University of Pennsylvania School of Medicine and Rutgers University are trying to develop an onboard computer that "reads" an astronaut's face for signs of emotional distress. Harvard University researchers have devised a series of mental tests that can be administered by a hand-held computer and that would help evaluate whether an astronaut is perhaps too fatigued to perform a complex task like a spacewalk.

In contrast to a flight on a shuttle or even a stint on the space station, a journey to Mars would most likely preclude sending a sick astronaut home for treatment. And if giving CPR is tricky on Earth, it's downright bizarre if the resuscitator is floating inside a spacecraft. Scientists have programmed a computerized dummy patient on which astronauts practice in-flight emergency care. They have tested—with good results, says Hal Doerr, head of medical operational support at the

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*Journalist JANE ELLEN STEVENS has flown on the Russian weightless simulator.*

NASA / JOHNSON SPACE CENTER

# AMERICA CELEBRATES THE GREATEST GENERATION

100-DAY TRIBUTE ★ WASHINGTON, DC ★ SUMMER 2004

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## Come Celebrate the Greatest Generation

Let the spirit of the Greatest Generation sweep you away this summer, when the country's newest monument is unveiled in Washington, DC. "America Celebrates the Greatest Generation" is a 100-day tribute to the heroism, culture and heritage of the World War II generation. At the heart of the celebration is the long-awaited dedication of the National World War II Memorial. From Memorial Day through Labor Day, more than 140 WWII-themed exhibitions, performances, walking tours, restaurant experiences and hotel packages pay tribute to the men and women who served in World War II and on the home front.

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America Celebrates the Greatest Generation is produced by The American Experience Foundation in partnership with the Washington, DC Convention & Tourism Corporation and Cultural Tourism DC.

## National World War II Memorial

The much anticipated World War II Memorial honors the 16 million who served in the armed forces of the United States during World War II, the more than 400,000 who died and the millions who supported the war effort from home. Symbolic of the defining event of the 20th Century, the memorial is a monument to the spirit, sacrifice and commitment of the Greatest Generation. The memorial is located on the National Mall and official dedication events take place on Memorial Day weekend; but the celebration lasts all summer long.

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agency's space biomedical institute—a dummy on the KC-135 airplane that NASA uses to simulate weightlessness. The so-called vomit comet executes dives and climbs to negate gravity's effect for as many as 25 seconds at a time.

Ionizing radiation, emitted by the Sun and other celestial objects, can penetrate a spacecraft and wreak havoc with human cells, potentially increasing the risk of cancer. To be sure, no astronaut has developed cancer attributable to radiation exposure in space, but so far the flights have been limited to low-Earth orbit or a few brief jaunts to the Moon. Preventing damage caused by solar and cosmic radiation is years away, says Frank Sulzman, manager of the space radiation health project at the Johnson Space Center. Adding a radiation shield to a spacecraft could add billions to the cost, according to some estimates. Though scientists have developed guidelines for how much radiation astronauts can be exposed to in low-Earth orbit, where the planet's magnetic field blocks some radiation, they're still in the dark about safe levels of radiation in deeper space, where radiation levels are higher.

Last year, NASA opened a new $34 million Space Radiation Laboratory at Brookhaven National Laboratory in Upton, New York, to test the effects of radiation on microorganisms, human cells in lab dishes, and lab rodents. The researchers want to know how cosmic radiation affects the central nervous system and at what levels radiation causes cellular damage that could lead to malignant growth. In a few years, Sulzman says, the agency will set new standards for radiation exposure on short-term missions to the Moon, but it will be a decade or so before they've done enough lab research to establish guidelines for a voyage to Mars.

Some scientists question whether enough can ever be done to make a Mars journey reasonably safe. "I think everybody knows that high-energy radiation is going to be a terribly serious problem," says Robert Park, a University of Maryland physicist and director of public information at the American Physical Society. Park has long

argued that only robots are suited to explore space. Also, he believes that even medically trained astronauts will lack the technology as well as the experience with weightlessness to handle serious medical emergencies in space, which are bound to arise. "There's always a problem when dealing with human beings," he says. "If a robot develops a problem, it's a pity, but we send up another one and don't

Will emergency procedures (a dummy gets CPR aboard a NASA aircraft that simulates low gravity) work in space?

declare a national day of mourning."

Charles, of the biomedical astronautics group, says if the United States decides to send people to Mars and back, the nation may simply have to live with the reality that the voyage—among the most hazardous undertakings in history—could not possibly be fail-safe. "All the problems may never be solved," he says, adding: "At some point a responsible program official will have to sign his or her name on the dotted line and say, 'We acknowledge that there is a level of risk remaining and we accept it.'"

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**SNACK TIME** "They literally suck it down in about 30 seconds!" says photographer Gerry Ellis of the gallon of milk consumed four times a day by orphan elephants such as Natumi, 3 (with keeper Patrick Dokata in Kenya's Tsavo East National Park). After they "finish their own bottle, [they] try to snorkel a bottle from an elie still drinking," says Ellis. Natumi's mother was killed by guards after she trespassed onto private land to drink from a watering hole. Natumi and 50 other young herdless elephants were rescued by the David Sheldrick Wildlife Trust orphanage. Photograph by Gerry Ellis, courtesy of Minden Pictures. —*HELEN STARKWEATHER*

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**Important information:** CRESTOR is prescribed along with diet for lowering cholesterol and is not for everyone, including people with liver disease, and women who are nursing, pregnant or may become pregnant. Tell your doctor promptly if you experience unexplained muscle pain or weakness, as they may be a sign of serious side effects. Be sure to tell your doctor about other medications you are taking. Simple blood tests are needed to check for liver problems before and 12 weeks after start of therapy or change of dose, and periodically thereafter. Side effects occur infrequently and include muscle aches, constipation, weakness, abdominal pain and nausea. They are usually mild and tend to go away. CRESTOR has not been shown to prevent heart disease or heart attacks. See adjacent page for additional important information.

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**Please read this summary carefully and then ask your doctor about CRESTOR. No advertisement can provide all the information needed to determine if a drug is right for you.**
**This advertisement does not take the place of careful discussions with your doctor. Only your doctor has the training to weigh the risks and benefits of a prescription drug.**

**BRIEF SUMMARY:** For full Prescribing Information, see package insert.

**INDICATIONS AND USAGE** CRESTOR is indicated 1. as an adjunct to diet to reduce elevated total-C, LDL-C, ApoB, nonHDL-C, and TG levels and to increase HDL-C in patients with primary hypercholesterolemia (heterozygous familial and nonfamilial) and mixed dyslipidemia (Fredrickson Type IIa and IIb); 2. as an adjunct to diet for the treatment of patients with elevated serum TG levels (Fredrickson Type IV); 3. to reduce LDL-C, total-C, and ApoB in patients with homozygous familial hypercholesterolemia as an adjunct to other lipid-lowering treatments (e.g., LDL apheresis) or if such treatments are unavailable.

**CONTRAINDICATIONS** CRESTOR is contraindicated in patients with a known hypersensitivity to any component of this product. Rosuvastatin is contraindicated in patients with active liver disease or with unexplained persistent elevations of serum transaminases (see WARNINGS, Liver Enzymes). **Pregnancy and Lactation** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. ROSUVASTATIN SHOULD BE ADMINISTERED TO WOMEN OF CHILDBEARING AGE ONLY WHEN SUCH PATIENTS ARE HIGHLY UNLIKELY TO CONCEIVE AND HAVE BEEN INFORMED OF THE POTENTIAL HAZARDS. If the patient becomes pregnant while taking this drug therapy should be discontinued immediately and the patient apprised of the potential hazard to the fetus. **WARNINGS Liver Enzymes** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. The incidence of persistent elevations (>3 times the upper limit of normal [ULN] occurring on 2 or more consecutive occasions) in serum transaminases in fixed dose studies was 0.4, 0, 0 and 0.1% in patients who received rosuvastatin 5, 10, 20, and 40 mg, respectively. In most cases, the elevations were transient and resolved or improved on continued therapy or after a brief interruption in therapy. There were two cases of jaundice, for which a relationship to rosuvastatin therapy could not be determined, which resolved after discontinuation of therapy. There were no cases of liver failure or irreversible liver disease in these trials. **It is recommended that liver function tests be performed before and at 12 weeks following both the initiation of therapy and any elevation of dose, and periodically (e.g., semiannually) thereafter.** Liver enzyme changes generally occur in the first 3 months of treatment with rosuvastatin. Patients who develop increased transaminase levels should be monitored until the abnormalities have resolved. Should an increase in ALT or AST of >3 times ULN persist, reduction of dose or withdrawal of rosuvastatin is recommended. Rosuvastatin should be used with caution in patients who consume substantial quantities of alcohol and/or have a history of liver disease (see CLINICAL PHARMACOLOGY, Special Populations, Hepatic Insufficiency). Active liver disease or unexplained persistent transaminase elevations are contraindications to the use of rosuvastatin (see CONTRAINDICATIONS). **Myopathy/Rhabdomyolysis Rare cases of rhabdomyolysis with acute renal failure secondary to myoglobinuria have been reported with rosuvastatin and with other drugs in this class.** Uncomplicated myalgia has been reported in rosuvastatin-treated patients (see ADVERSE REACTIONS). Creatine kinase (CK) elevations (>10 times upper limit of normal) occurred in 0.2% to 0.4% of patients taking rosuvastatin at doses of up to 40 mg in clinical studies. Treatment-related myopathy, defined as muscle aches or muscle weakness in conjunction with increases in CK values >10 times upper limit of normal, was reported in up to 0.1% of patients taking rosuvastatin doses of up to 40 mg in clinical studies. Rare cases of rhabdomyolysis were seen with higher than recommended doses (80 mg) of rosuvastatin in clinical trials. Factors that may predispose patients to myopathy with HMG-CoA reductase inhibitors include advanced age (≥65 years), hypothyroidism, and renal insufficiency. The incidence of myopathy increased at doses of rosuvastatin above the recommended dosage range. Consequently: 1. Rosuvastatin should be prescribed with caution in patients with predisposing factors for myopathy, such as, renal impairment (see DOSAGE AND ADMINISTRATION), advanced age, and hypothyroidism. 2. Patients should be advised to promptly report unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. Rosuvastatin therapy should be discontinued if markedly elevated CK levels occur or myopathy is diagnosed or suspected. 3. The risk of myopathy during treatment with rosuvastatin may be increased with concurrent administration of other lipid-lowering therapies or cyclosporine, (see CLINICAL PHARMACOLOGY, Drug Interactions, PRECAUTIONS, Drug Interactions, and DOSAGE AND ADMINISTRATION). **The benefit of further alterations in lipid levels by the combined use of rosuvastatin with fibrates or niacin should be carefully weighed against the potential risks of this combination. Combination therapy with rosuvastatin and gemfibrozil should generally be avoided. (See DOSAGE AND ADMINISTRATION and PRECAUTIONS, Drug Interactions).** 4. **The risk of myopathy during treatment with rosuvastatin may be increased in circumstances which increase rosuvastatin drug levels (see CLINICAL PHARMACOLOGY, Special Populations, Race and Renal Insufficiency, and PRECAUTIONS, General).** 5. **Rosuvastatin therapy should also be temporarily withheld in any patient with an acute, serious condition suggestive of myopathy or predisposing to the development of renal failure secondary to rhabdomyolysis (e.g., sepsis, hypotension, major surgery, trauma, severe metabolic, endocrine, and electrolyte disorders, or uncontrolled seizures).** **PRECAUTIONS General** Before instituting therapy with rosuvastatin, an attempt should be made to control hypercholesterolemia with appropriate diet and exercise, weight reduction in obese patients, and treatment of underlying medical problems (see INDICATIONS AND USAGE). Administration of rosuvastatin 20 mg to patients with severe renal impairment ($CL_{cr}$ <30 mL/min/1.73 $m^2$) resulted in a 3-fold increase in plasma concentrations of rosuvastatin compared with healthy volunteers (see WARNINGS, Myopathy/Rhabdomyolysis and DOSAGE AND ADMINISTRATION). Pharmacokinetic studies show an approximate 2-fold elevation in median exposure in Japanese subjects residing in Japan and in Chinese subjects residing in Singapore compared with Caucasians residing in North America and Europe. The contribution of environmental and genetic factors to the difference observed has not been determined. However, these increases should be considered when making rosuvastatin dosing decisions for patients of Japanese and Chinese ancestry. (See WARNINGS, Myopathy/ Rhabdomyolysis; CLINICAL PHARMACOLOGY Special Populations Race.) **Information for Patients** Patients should be advised to report promptly unexplained muscle pain, tenderness, or weakness, particularly if accompanied by malaise or fever. When taking rosuvastatin with an aluminum and magnesium hydroxide combination antacid, the antacid should be taken at least 2 hours after rosuvastatin administration (see CLINICAL PHARMACOLOGY Drug Interactions). **Laboratory Tests** In the rosuvastatin clinical trial program, dipstick-positive proteinuria and microscopic hematuria were observed among rosuvastatin-treated patients, predominantly in patients dosed above the recommended dose range (i.e., 80 mg). However, this finding was more frequent in patients taking rosuvastatin 40 mg, when compared to lower doses of rosuvastatin or comparator statins, though it was generally transient and was not associated with worsening renal function. Although the clinical significance of this finding is unknown, a dose reduction should be considered for patients on rosuvastatin 40 mg therapy with unexplained persistent proteinuria during routine urinalysis testing. **Drug Interactions Cyclosporine:** When rosuvastatin 10 mg was coadministered with cyclosporine in cardiac transplant patients, rosuvastatin mean $C_{max}$ and mean AUC were increased 11-fold and 7-fold, respectively, compared with healthy volunteers. These increases are considered to be clinically significant and require special consideration in the dosing of rosuvastatin to patients taking concomitant cyclosporine (see WARNINGS, Myopathy/Rhabdomyolysis, and DOSAGE AND ADMINISTRATION). **Warfarin:** Coadministration of rosuvastatin to patients on stable warfarin therapy resulted in clinically significant rises in INR (>4, baseline 2-3). In patients taking coumarin anti-coagulants and rosuvastatin concomitantly, INR should be determined before starting rosuvastatin and frequently enough during early therapy to ensure that no significant alteration of INR occurs. Once a stable INR time has been documented, INR can be monitored at the intervals usually recommended for patients on coumarin anticoagulants. If the dose of rosuvastatin is changed, the same procedure should be repeated. Rosuvastatin therapy has not been associated with bleeding or with changes in INR in patients not taking anti-coagulants. **Gemfibrozil:** Coadministration of a single rosuvastatin dose to healthy volunteers on gemfibrozil (600 mg twice daily) resulted in a 2.2- and 1.9-fold, respectively, increase in mean $C_{max}$ and mean AUC of rosuvastatin (see DOSAGE AND ADMINISTRATION). **Endocrine Function** Although clinical studies have shown that rosuvastatin alone does not reduce basal plasma cortisol concentration or impair adrenal reserve, caution should be exercised if any HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered concomitantly with drugs that may decrease the levels or activity of endogenous steroid hormones such as ketoconazole, spironolactone, and cimetidine. **CNS Toxicity** CNS vascular lesions, characterized by perivascular hemorrhages, edema, and mononuclear cell infiltration of perivascular spaces, have been observed in dogs treated with several other members of this drug class. A chemically similar drug in this class produced dose-dependent optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in dogs, at a dose that produced plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose. Edema, hemorrhage, and partial necrosis in the interstitium of the choroid plexus was observed in a female dog sacrificed moribund at day 24 at 90 mg/kg/day by oral gavage (systemic exposures 100 times the human exposure at 40 mg/day based on AUC comparisons). Corneal opacity was seen in dogs treated for 52 weeks at 6 mg/kg/day by oral gavage (systemic exposures 20 times the human exposure at 40 mg/day based on AUC comparisons). Cataracts were seen in dogs treated for 12 weeks by oral gavage at 30 mg/kg/day (systemic exposures 60 times the human exposure at 40 mg/day based on AUC comparisons). Retinal dysplasia and retinal loss were seen in dogs treated for 4 weeks by oral gavage at 90 mg/kg/day (systemic exposures 100 times the human exposure at 40 mg/day based on AUC). Doses ≤30 mg/kg/day (systemic exposures ≤60 times the human exposure at 40 mg/day based on AUC comparisons) following treatment up to one year, did not reveal retinal findings. **Carcinogenesis, Mutagenesis, Impairment of Fertility** In a 104-week carcinogenicity study in rats at dose levels of 2, 20, 60, or 80 mg/kg/day by oral gavage, the incidence of uterine stromal polyps was significantly increased in females at 80 mg/kg/day at systemic exposure 20 times the human exposure at 40 mg/day based on AUC. Increased incidence of polyps was not seen at lower doses. In a 107-week carcinogenicity study in mice given 10, 60, 200 mg/kg/day by oral gavage, an increased incidence of hepatocellular adenoma/carcinoma was observed at 200 mg/kg/day at systemic exposures 20 times human exposure at 40 mg/day based on AUC. An increased incidence of hepatocellular tumors was not seen at lower doses. Rosuvastatin was not mutagenic or clastogenic with or without metabolic activation in the Ames test with *Salmonella typhimurium* and *Escherichia coli*, the mouse lymphoma assay and the chromosomal aberration assay in Chinese hamster lung cells. Rosuvastatin was negative in the *in vivo* mouse micronucleus test. In rat fertility studies with oral gavage doses of 5, 15, 50 mg/kg/day, males were treated for 9 weeks prior to and throughout mating and females were treated 2 weeks prior to mating and throughout mating until gestation day 7. No adverse effect on fertility was observed at 50 mg/kg/day (systemic exposures up to 10 times human exposure at 40 mg/day based on AUC comparisons). In testicles of dogs treated with rosuvastatin at 30 mg/kg/day for one month, spermatocytic giant cells were seen. Spermatocytic giant cells were observed in monkeys after 6-month treatment at 30 mg/kg/day in addition to vacuolation of seminiferous tubular epithelium. Exposures in the dog were 20 times and in the monkey 10 times human exposure at 40 mg/day based on body surface area comparisons. Similar findings have been seen with other drugs in this class. **Pregnancy** ***Pregnancy Category X*** See CONTRAINDICATIONS. Rosuvastatin may cause fetal harm when administered to a pregnant woman. Rosuvastatin is contraindicated in women who are or may become pregnant. Safety in pregnant women has not been established. There are no adequate and well-controlled studies of rosuvastatin in pregnant women. Rosuvastatin crosses the placenta and is found in fetal tissue and amniotic fluid at 3% and 20%, respectively, of the maternal plasma concentration following a single 25 mg/kg oral gavage dose on gestation day 16 in rats. A higher fetal tissue distribution (25% maternal plasma concentration) was observed in rabbits after a single oral gavage dose of 1 mg/kg on gestation day 18. If this drug is administered to a woman with reproductive potential, the patient should be apprised of the potential hazard to a fetus. In female rats given oral gavage doses of 5, 15, 50 mg/kg/day rosuvastatin before mating and continuing through day 7 postpartus resulted in decreased fetal body weight (female pups) and delayed ossification at the high dose (systemic exposures 10 times human exposure at 40 mg/day based on AUC comparisons). In pregnant rats given oral gavage doses of 2, 20, 50 mg/kg/day from gestation day 7 through lactation day 21 (weaning), decreased pup survival occurred in groups given 50 mg/kg/day, systemic exposures ≥12 times human exposure at 40 mg/day based on body surface area comparisons. In pregnant rabbits given oral gavage doses of 0.3, 1, 3 mg/kg/day from gestation day 6 to lactation day 18 (weaning), exposures equivalent to human exposure at 40 mg/day based on body surface area comparisons, decreased fetal viability and maternal mortality was observed. Rosuvastatin was not teratogenic in rats at ≤25 mg/kg/day or in rabbits ≤3 mg/kg/day (systemic exposures equivalent to human exposure at 40 mg/day based on AUC or body surface comparisons, respectively). **Nursing Mothers** It is not known whether rosuvastatin is excreted in human milk. Studies in lactating rats have demonstrated that rosuvastatin is secreted into breast milk at levels 3 times higher than that obtained in the plasma following oral gavage dosing. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in nursing infants from rosuvastatin, a decision should be made whether to discontinue nursing or administration of rosuvastatin taking into account the importance of the drug to the lactating woman. **Pediatric Use** The safety and effectiveness in pediatric patients have not been established. Treatment experience with rosuvastatin in a pediatric population is limited to 8 patients with homozygous FH. None of these patients was below 8 years of age. **Geriatric Use** Of the 10,275 patients in clinical studies with rosuvastatin, 3,159 (31%) were 65 years and older, and 698 (6.8%) were 75 years and older. The overall frequency of adverse events and types of adverse events were similar in patients above and below 65 years of age. (See WARNINGS, Myopathy/Rhabdomyolysis.) The efficacy of rosuvastatin in the geriatric population (≥65 years of age) was comparable to the efficacy observed in the non-elderly. **ADVERSE REACTIONS** Rosuvastatin is generally well tolerated. Adverse reactions have usually been mild and transient. In clinical studies of 10,275 patients, 3.7% were discontinued due to adverse experiences attributable to rosuvastatin. The most frequent adverse events thought to be related to rosuvastatin were myalgia, constipation, asthenia, abdominal pain, and nausea. **Clinical Adverse Experiences** Adverse experiences regardless of causality assessment, reported in ≥2% of patients in placebo-controlled clinical studies of rosuvastatin are shown in Table 1; discontinuations due to adverse events in these studies of up to 12 weeks duration occurred in 3% of patients on rosuvastatin and 5% on placebo.

**Table 1. Adverse Events in Placebo-Controlled Studies**

| Adverse event | Rosuvastatin N=744 | Placebo N=382 |
|---|---|---|
| Pharyngitis | 9.0 | 7.6 |
| Headache | 5.5 | 5.0 |
| Diarrhea | 3.4 | 2.9 |
| Dyspepsia | 3.4 | 3.1 |
| Nausea | 3.4 | 3.1 |
| Myalgia | 2.8 | 1.3 |
| Asthenia | 2.7 | 2.6 |
| Back pain | 2.6 | 2.4 |
| Flu syndrome | 2.3 | 1.8 |
| Urinary tract infection | 2.3 | 1.6 |
| Rhinitis | 2.2 | 2.1 |
| Sinusitis | 2.0 | 1.8 |

In addition, the following adverse events were reported, regardless of causality assessment, in ≥1% of 10,275 patients treated with rosuvastatin in clinical studies. The events in *italics* occurred in ≥2% of these patients. **Body as a Whole:** *Abdominal pain, accidental injury, chest pain, infection, pain,* pelvic pain, and neck pain. **Cardiovascular System:** *Hypertension,* angina pectoris, vasodilatation, and palpitation. **Digestive System:** *Constipation, gastroenteritis,* vomiting, flatulence, periodontal abscess and gastritis. **Endocrine:** Diabetes mellitus. **Hemic and Lymphatic System:** Anemia and ecchymosis. **Metabolic and Nutritional Disorders:** *Peripheral edema.* **Musculoskeletal System:** *Arthritis, arthralgia,* and pathological fracture. **Nervous System:** *Dizziness, insomnia, hypertonia, paresthesia, depression,* anxiety, vertigo, and neuralgia **Respiratory System:** *Bronchitis, cough increased,* dyspnea, pneumonia, and asthma. **Skin and Appendages:** *Rash* and pruritus. **Laboratory Abnormalities:** In the rosuvastatin clinical trial program, dipstick-positive proteinuria and microscopic hematuria were observed among rosuvastatin-treated patients, predominantly in patients dosed above the recommended dose range (i.e., 80 mg). However, this finding was more frequent in patients taking rosuvastatin 40 mg, when compared to lower doses of rosuvastatin or comparator statins, though it was generally transient and was not associated with worsening renal function. (See PRECAUTIONS, Laboratory Tests.) Other abnormal laboratory values reported were elevated creatinine phosphokinase, transaminases, hyperglycemia, glutamyl transpeptidase, alkaline phosphatase, bilirubin, and thyroid function abnormalities. Other adverse events reported less frequently than 1% in the rosuvastatin clinical study program, regardless of causality assessment, included arrhythmia, hepatitis, hypersensitivity reactions (i.e., face edema, thrombocytopenia, leukopenia, vesiculobullous rash, urticaria, and angioedema), kidney failure, syncope, myasthenia, myositis, pancreatitis, photosensitivity reaction, myopathy, and rhabdomyolysis **OVERDOSAGE** There is no specific treatment in the event of overdose. In the event of overdose, the patient should be treated symptomatically and supportive measures instituted as required. Hemodialysis does not significantly enhance clearance of rosuvastatin. **DOSAGE AND ADMINISTRATION** The patient should be placed on a standard cholesterol-lowering diet before receiving CRESTOR and should continue on this diet during treatment. CRESTOR can be administered as a single dose at any time of day, with or without food. **Hypercholesterolemia (Heterozygous Familial and Nonfamilial) and Mixed Dyslipidemia (Fredrickson Type IIa and IIb)** The dose range for CRESTOR is 5 to 40 mg once daily. Therapy with CRESTOR should be individualized according to goal of therapy and response. The usual recommended starting dose of CRESTOR is 10 mg once daily. Initiation of therapy with 5 mg once daily may be considered for patients requiring less aggressive LDL-C reductions or who have predisposing factors for myopathy (see WARNINGS, Myopathy/Rhabdomyolysis). For patients with marked hypercholesterolemia (LDL-C > 190 mg/dL) and aggressive lipid targets, a 20-mg starting dose may be considered. The 40-mg dose of CRESTOR should be reserved for those patients who have not achieved goal LDL-C at 20 mg (see WARNINGS, Myopathy/ Rhabdomyolysis). After initiation and/or upon titration of CRESTOR, lipid levels should be analyzed within 2 to 4 weeks and dosage adjusted accordingly. **Homozygous Familial Hypercholesterolemia** The recommended starting dose of CRESTOR is 20 mg once daily in patients with homozygous FH. The maximum recommended daily dose is 40 mg. CRESTOR should be used in these patients as an adjunct to other lipid-lowering treatments (e.g., LDL apheresis) or if such treatments are unavailable. Response to therapy should be estimated from pre-apheresis LDL-C levels. **Dosage in Patients Taking Cyclosporine** In patients taking cyclosporine, therapy should be limited to CRESTOR 5 mg once daily (see WARNINGS, Myopathy/Rhabdomyolysis, and PRECAUTIONS, Drug Interactions). **Concomitant Lipid-Lowering Therapy** The effect of CRESTOR on LDL-C and total-C may be enhanced when used in combination with a bile acid binding resin. If CRESTOR is used in combination with gemfibrozil, the dose of CRESTOR should be limited to 10 mg once daily (see WARNINGS, Myopathy/ Rhabdomyolysis, and PRECAUTIONS, Drug Interactions). **Dosage in Patients With Renal Insufficiency** No modification of dosage is necessary for patients with mild to moderate renal insufficiency. For patients with severe renal impairment ($CL_{cr}$ <30 mL/min/1.73 $m^2$) not on hemodialysis, dosing of CRESTOR should be started at 5 mg once daily and not to exceed 10 mg once daily (see PRECAUTIONS, General, and CLINICAL PHARMACOLOGY, Special Populations, Renal Insufficiency).

**NOTE: This summary provides important information about CRESTOR. For more information, please ask your doctor or health care professional about the full Prescribing Information and discuss it with them.**

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# Hear Here

*Record your life story at a studio in New York City's Grand Central Terminal. You just may make history* — BY DAVID TAYLOR

"It's a good way to get to know each other," says Junior Burgos (with Nidia Montan).

"DO YOU HAVE SOMETHING to catch the baby?" a woman asked Joe Caracciolo, a New York City transit foreman riding the subway on his way to work. He didn't, but the birth on the C train was not about to stop. "It just flew out," Caracciolo recalled. "It was like catching a football." When he announced "it's a boy," the whole car erupted. "Everybody was kissing and hugging."

That miraculous moment is one of hundreds collected by StoryCorps, an unusual oral history project that encourages people to share their life experiences with one another in a tiny recording studio in New York City's Grand Central Terminal. The boxy 8- by 10-foot structure, which opened this past October, stands in a busy passageway near Track 14. The booth's translucent walls, covered with little human figures in yellow, red and orange, emit a spaceship glow. Travelers stop and gaze at a changing electronic sign ("Listening is an Act of Love," "Listen Closely") or listen to snippets of recorded interviews at the press of a button.

A peek through the soundproof booth's narrow window usually gives a glimpse of two people seated at a table, talking, a pair of microphones between them. Here, an old man revealed to his nephew his awkwardness as a youth, confessing that he met his wife of 60 years only because a locked door kept him from fleeing their blind date. A teenage girl told her older sister how she contemplated killing herself during her confinement in a psychiatric hospital. "The only reason that I didn't is because of you and Mom," she confided, almost inaudibly. A young woman tried to stifle her laughter as her Hindu father, who is from India, recalled his first visit to an American restaurant 35 years ago. He was shocked to see "hot dog" on the menu. "I couldn't believe it!" he said. "How could people eat the dogs!"

StoryCorps was created by David Isay, a 38-year-old radio producer who says he wanted to "take oral history and put it in the hands of regular people." That's in contrast to traditional oral history conducted by academics and journalists. "You can bring your mother or grandfather or neighbor—anyone you choose—and conduct a 40-minute oral history interview with the help of a facilitator."

Isay has built a career on listening. Among his National Public Radio documentaries are a 1993 chronicle of life in a Chicago housing project, "Ghetto Life 101," and 2002's "The Yiddish Radio Project," featuring interviews with Jewish-American radio stars and excerpts of shows from the 1930s and '40s. In 2000, Isay was awarded a fellowship from the MacArthur Foundation, which cited him for "drawing raw human responses from a diversity of voices." The so-called genius award of $500,000 over five years freed him to develop the "crazy scheme," as he puts it, that would become StoryCorps.

A Connecticut native and longtime New York City resident, Isay had his eye on Grand Central from the start because at one time or another every kind of person passes through. "It's the epicenter of New York City."

Since opening, StoryCorps has recorded some 600 interviews. Studs Terkel, the author of *Working* and ten other books based on

ANDREW HOLBROOKE; MAP: ELIZABETH WOLF

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## "I like hearing the details of a person's life that are not public."

StoryCorps, in Grand Central Terminal, has recorded more than 600 interviews so far.

interviews, was on hand to help launch the project. Terkel, 92, praised StoryCorps for "celebrating the lives of the uncelebrated." Gazing up at the terminal's vaulted ceiling, he said, "We know there's an architect, but who hung the iron? Who were the brick masons? Who swept the floors? . . . They are the ones who make the world go around, these millions of people who have never expressed themselves."

MOST STORYCORPS participants make an interview appointment on the project's Web site (www.storycorps.net), which also offers a "question generator." What's your first memory? Who were your favorite relatives? What have you learned from life?

Louisa Stephens, a high-school teacher, has conducted about 20 StoryCorps interviews with family, friends or students. "Every time I go I feel I've been lit from within," she says. "I like hearing the details of a person's life that are not public—what a grandmother said to you or what you're afraid of."

An interview session costs $10, and participants get a CD of their conversation. If they grant permission, a copy goes to the Library of Congress, which plans to make the recordings available for in-library listening by year's end.

Isay says he was inspired by the 1930s Federal Writers' Project, a Works Progress Administration program that collected thousands of life-history interviews now housed at the Library of Congress American Folklife Center. Back then the technology for creating a treasury of American life was unwieldy. In the

Terkel (left, with Isay at the StoryCorps opening): "Who were the brick masons?"

1930s, a state-of-the-art recording machine was the size of a coffee table and required two strong people to lift. Still, the writer's project captured a spectrum of American stories, of blacks who had experienced slavery, of destitute Dust Bowl refugees, of a Vermont farmwife butchering a hog, of a Harlem fishmonger.

Among the StoryCorps' memorable moments was a surprise marriage proposal. She was Brazilian, he a Brooklyn native. In the interview's last five minutes, he pulled out a ring and placed it on the table. "This is the ring that my father gave to my mother," Michael Wolmetz said. "I thought I would give it to you." His voice broke as he continued, "Debora, will you please marry me?" She said yes.

"It was the only time I cried in the booth," says the interview's facilitator, Kayvon Bahramian.

With plans to put StoryCorps booths in Chicago, Los Angeles and Washington, D.C. and to create a mobile version, Isay hopes to collect 250,000 interviews in the next decade, if funds are available. For now, corporate sponsors and foundations pitch in to keep the stories coming.

ONE JANUARY MORNING, Marco Ceglie, 30, and his mother, Carol, took seats in the booth. Marco, wearing a knit cap and a tuft of hair under his lower lip, said he believes that the soul dwells in the voice. "Photos are great," he said, "but they're static." Marco had hoped to interview his father ("a man of three-word answers"), but it was his mother who made the 40-minute train ride from their home in Maplewood, New Jersey, to Grand Central.

Carol, who grew up in Slovenia in the 1930s and '40s, looked apprehensive, but warmed to her son's questions. She recalled the night Nazi soldiers held her family at gunpoint. She was about 5. "I was holding on to my father's leg, hiding behind him." She went on to say that her family survived the war and that she emigrated to America in 1964. She also told her son she's proud that he did not get mixed up with gangs.

When the two came out of the booth, her eyes were glistening. "It was good," she said. "I might bring someone myself." Isay would like nothing better.

*DAVID TAYLOR's book on ginseng will be published this year by Algonquin Books.*

ANDREW HOLBROOKE; FRANK FRANKLIN II / AP / WIDE WORLD PHOTOS

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SYNVISC is generally well tolerated; however, it may not work for everyone. The most commonly reported side effects were temporary pain, swelling, and/or fluid accumulation in the injected knee. If fluid accumulation is large or painful, call your doctor. Other side effects, such as rash, have been reported rarely. Before you begin your treatment with SYNVISC, advise your doctor if you are allergic to products from birds, such as feathers, eggs, or poultry, or if your leg is swollen or infected. You should avoid strenuous or prolonged weight-bearing activities after treatment. Talk to your doctor before resuming these activities. The safety and effectiveness of SYNVISC in children or in women who are pregnant or breast-feeding have not been tested. It is not known whether SYNVISC is passed into breast milk.

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## PATIENT INFORMATION

Be sure to read the following important information carefully. This information does not take the place of your doctor's advice. If you do not understand this information or want to know more, ask your doctor.

### WHAT IS SYNVISC?

Synvisc is a gel-like mixture that is made up of hylan A fluid, hylan B gel, and salt water. Hylan A and hylan B are made from a substance called hyaluronan (pronounced hye-a-loo-ROE-nan), also known as sodium hyaluronate that comes from chicken combs. This is a natural substance found in the body and is present in very high amounts in joints. The body's own hyaluronan acts like a lubricant and a shock absorber in the joint and is needed for the joint to work properly. Osteoarthritis (pronounced os-TE-o-ar-THRI-tis) (OA) is a type of arthritis that involves the wearing down of cartilage (the protective covering on the ends of your bones). In OA, there may not be enough hyaluronan, and there may be a decrease in the quality of the hyaluronan in the joint. Synvisc comes in syringes containing 2 mL (half a teaspoon) of product. Synvisc is injected directly into your knee.

### WHAT IS SYNVISC USED FOR?

Synvisc is used to relieve knee pain due to OA. It is used for patients who do not get enough relief from simple painkillers, such as acetaminophen, or from exercise and physical therapy.

### WHAT ARE THE BENEFITS OF SYNVISC?

Two medical studies involving a total of 132 patients were done in Germany. The patients in these studies were at least 40 years old and had knee pain due to OA. The patients were placed in one of two groups. One group was given an injection of Synvisc into one or both knees once a week for three weeks. The second group was given an injection of salt water once a week for three weeks. As part of the study, knee joint pain was measured for 26 weeks. Also, patients and doctors were asked to judge the success of the treatment for 26 weeks. Patients with OA knee pain, who did not get pain relief with other medicines, got pain relief with Synvisc. The patients given Synvisc had more pain relief than the patients given salt water. Some patients started to feel pain relief after the first week of Synvisc treatment. The most pain relief and the greatest amount of treatment success was seen 8 to 12 weeks after Synvisc treatment started.

A medical study done in the United States involved 90 patients. The patients were at least 40 years old and had knee pain due to OA. Patients were placed into one of two groups. One group was given Synvisc once a week for three weeks. The second group had a needle inserted into the knee to have any fluid removed (this procedure is called arthrocentesis [pronounced AR-thro-sen-TE-sis]) once a week for three weeks. Patients improved after Synvisc treatment, but not more than patients who had arthrocentesis. This study was different from the German studies because the last time the two groups were compared was only two weeks after the last Synvisc injection. The study was also different in other ways, including length of time that patients had to stop taking medicines before they could start treatment. The length of time patients had to stop taking medicines was two weeks in the German studies and four weeks in the U.S. study.

### WHAT OTHER TREATMENTS ARE AVAILABLE FOR OA?

If you have OA, there are other things you can do besides getting Synvisc. These include:

**Non-drug treatments**

- avoiding activities that cause knee pain
- exercise
- physical therapy
- removal of excess fluid from your knee

**Drug therapy**

- pain relievers such as acetaminophen and narcotics
- drugs that reduce inflammation (signs of inflammation are swelling, pain or redness), such as aspirin and other nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen and naproxen
- steroids that are injected directly into your knee

### ARE THERE ANY REASONS WHY YOU SHOULD NOT RECEIVE SYNVISC?

- You should not get this product if you have had any allergic reaction before to Synvisc or hyaluronan products. Signs of an allergic reaction may include swelling of your face, tongue, or throat; difficulty breathing or swallowing; shortness of breath; wheezing; chest pain; a tightness in your throat; sleepiness; rash; itching; hives; flushing; and/or fever. You should call your doctor immediately if you develop any of these signs of an allergic reaction.
- You should not be given Synvisc if you have a knee joint infection or skin diseases or infections around the area where the injection will be given. Talk to your doctor if you have any questions about this information.

### THINGS YOU SHOULD KNOW ABOUT SYNVISC:

- Synvisc is only for injection into the knee, performed by a doctor or other qualified health care professional.
- Tell your doctor if you are allergic to products from birds such as feathers, eggs, and poultry.
- The packaging of this product contains dry natural rubber latex.
- After you receive the injection, you may need to avoid activities such as jogging, tennis, heavy lifting, or standing for a long time.
- Synvisc has not been tested in pregnant women, or women who are nursing. You should tell your doctor if you think you are pregnant, or if you are nursing a child.
- The safety and effectiveness of Synvisc have not been tested in children.

### POSSIBLE SIDE EFFECTS:

- The side effects (also called reactions) sometimes seen when Synvisc is injected into the knee as a first or repeat set of injections were pain, swelling, heat, redness, and/or fluid build-up around the knee. These reactions were generally mild and did not last long, but sometimes fluid accumulation was considerable and painful; cases where the swelling is extensive and painful should be discussed with your doctor. The reactions seemed to occur more often when Synvisc was injected into the knee as a repeat set of injections than when Synvisc was injected as a first set of injections.
- These reactions were generally treated by giving pain relievers by mouth such as acetaminophen or by giving NSAIDs by mouth or injections of steroids, or by removing fluid from the knee joint. Patients have rarely undergone arthroscopy (a surgical inspection of the knee joint) and other medical procedures.
- Rare cases of knee joint infection have been reported after Synvisc injections.
- Rashes, hives and itching have been seen in patients after Synvisc treatment. Before you are given Synvisc, tell your doctor if something like this has ever happened to you after receiving an injection of Synvisc or other hyaluronan products.
- Other less common side effects have been: muscle pain/cramps, flushing and/or swelling of your face, fast heartbeat, nausea (or feeling sick to your stomach), dizziness, fever, chills, headache, difficulty breathing, swelling in your arms and/or legs, prickly feeling of your skin, and in rare cases a low number of platelets in the blood (platelets are a type of blood cell that are needed to help clot your blood when you are cut or injured)
- If any of the above symptoms or signs appear after you are given Synvisc, or if you have any other problems, you should call your doctor.

### HOW IS SYNVISC GIVEN?

Your doctor will give you your injection of Synvisc (2mL) into your knee once a week, for a total of three injections.

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### HOW DO I GET MORE INFORMATION ABOUT SYNVISC?

If you have any questions or would like to find out more about Synvisc, you may call Wyeth-Ayerst Pharmaceuticals, at 1-800-99-WYETH.

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## Important information about insurance coverage for SYNVISC treatments

SYNVISC is eligible for reimbursement by most insurance plans. Many require that your physician provide SYNVISC. If your physician does not provide SYNVISC and he or she writes a prescription for SYNVISC, some insurance plans, including Medicare, may not cover the cost. Therefore, it is recommended that you ask your physician if his or her office provides SYNVISC. Procedures vary from policy to policy, so please check with your physician and/or your insurer. If you have additional questions about insurance coverage, please contact the SYNVISC Reimbursement Hotline at 1-800-982-8292. This toll-free number can be accessed between 9:00 a.m. and 6:00 p.m., Eastern Time, Monday through Friday.

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With 5,000 ships, 11,000 aircraft and 150,000 men, D-Day (troops land in Normandy, France) marked history's largest invasion yet.

# "Find a Way to Stay Alive"

Sixty years ago this month, the Allies landed. A founder of the D-Day Museum was on the beach

WHEN FRANK WALK slogged through the waves and onto Omaha Beach at 7:30 a.m. on June 6, 1944, D-Day, bodies of the dead and dying already littered the sand as far as he could see. They had fallen in grotesque positions—some armless or legless, some moaning or calling for help, some floating in the water or collecting along shore. The roar of gunfire was deafening. The sky seemed to be on fire.

"I remember my first thought: find a way to stay alive," says Walk (at right in 1946), a captain with the Engineer Special Brigade.

Once he had gotten his bearings, Walk reported to his colonel as instructed. It was another shock in the endless series of shocks he encountered at Normandy that day. Walk found the colonel pale, disoriented and incoherent. "He was just out of his mind, talking crazy," he says.

"You take over, Walk," the beach's commanding general ordered him. And so it was that the inhumanly daunting task of directing traffic on Omaha Beach fell to Walk, 23, of Baton Rouge, Louisiana. For the next few hours, he labored to clear up the monumental and fatal traffic jam. German soldiers controlled the five exits off the beach, so there was no way out for the Allied soldiers. Yet the Allies kept coming, thousands of them pouring ashore, hundreds mowed down on the spot.

About noon, a little-known meeting was convened to resolve a crucial question: Should the invasion of Omaha Beach be called off? The half-hour convocation took place near a captured German pillbox. The cast of characters included three generals and two colonels, as well as Gen. Omar Bradley, commander of the

HULTON ARCHIVE / GETTY IMAGES; NATIONAL D-DAY MUSEUM. GIFT OF FRANK WALK.

First Army, who participated by radio from offshore—and Frank Walk, who stood by and witnessed every word.

"Bradley raised the question of whether we should withdraw," Walk says. "Should we stop the landings? Things were going very badly at that point."

Bradley wanted to know how many casualties the men had suffered. How much of the German fortification had been removed. "They were talking about what stiff resistance they were encountering," Walk says, "and the success they had had in clearing two of the exits from the beach. And how, because of that, they could put some troops through those exits and have them encircle from behind the enemy emplaced on the bluffs."

The group reviewed the reasons not to withdraw, Walk says. For one thing, some advances, however small, had been made. For another, withdrawal would have demoralized both the troops and the public back home. And mounting another expeditionary force—after all the time, money, effort and lives expended on this one—was almost unthinkable.

"They decided to hold up the landing of additional troops until things could be gotten under better control on the beach," Walk says. "Hold up bringing in the fresh troops. And get some of the living soldiers off the beach and inland." It was up to Walk to help implement that decision. By D-Day-plus-two days, the beach was secured and the magnitude of what had been accomplished was apparent.

**Walk (left, at 83) lived to tell his tale (his gear is on display in New Orleans).**

Today, 60 years later, some of Walk's possessions that day—his Colt pistol, his map case, some bandages—are in the collection of the National D-Day Museum in New Orleans, a Smithsonian affiliate. Walk was one of its founders. "It was a good feeling to be part of a successful operation," says Walk, 83. "And to have lived. That was the biggest success of all. To have *lived*." —*ELIZABETH MULLENER*

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*Adapted from* War Stories: Remembering World War II *by Elizabeth Mullener; hardback, LSU Press; paperback, Berkeley Pub Group, August 2004.*

## FROM THE ATTIC

**BREAKING GROUND** In a grove of doomed trees on the National Mall on June 15, 1904, Smithsonian Secretary Samuel P. Langley took his turn with a shovel before handing it to other officials in a ceremony that marked the beginning of construction of a state-of-the-art museum—today's National Museum of Natural History. But one man to take up the shovel that day had already broken new ground. Solomon G. Brown, 75, the Smithsonian's first African-American employee, had been hired as a cabinetmaker in 1852 shortly after the Institution was founded. Over a 52-year career, he had become a scientific illustrator, a naturalist and a lecturer before the city's scientific societies. On this day he was thinking about the trees gracing the National Mall where the museum would be built. Their imminent destruction was "felt keenly by this old man," the *Washington Post* reported in its story on the ceremony. Brown could remember when French flowering cherry trees and towering cedars and mulberry trees were planted by landscape artist Andrew Jackson Downing in 1850. "It seems a pity that any should have to be cut down," he told the newspaper. Brown would retire from the Smithsonian in February 1906 and die four months later at the age of 77. This month, on the 100th anniversary of the groundbreaking, the Natural History Museum will plant a tree in the name of Solomon G. Brown. —*BETH PY-LIEBERMAN*

*FRANK WALK COLLECTION; VANESSA S. BROWN / SOUTHERN LIGHTS STUDIO / NATIONAL D-DAY MUSEUM, PISTOL AND PISTOL BELT: ON LOAN FROM FRANK WALK. ALL OTHER ARTIFACTS: GIFT OF FRANK WALK.; SMITHSONIAN INSTITUTION ARCHIVES*

# Scrap Hunt

The most revered U.S. flag is full of holes. American History Museum curators are on the case

AFTER MORE THAN 190 YEARS, bits of the Star-Spangled Banner are still turning up. The great flag that flew over Fort McHenry and inspired Francis Scott Key to write the words that would become the national anthem was torn and tattered by burning shells that British ships hurled at the Baltimore garrison in September 1814. But the 25-hour battle, witnessed by Key, accounts for only some of the damage to the woolen icon, which has resided at the Smithsonian Institution since 1907.

"Much of the damage came instead from people cutting out pieces of the flag for souvenirs," says curator Marilyn Zoidis, head of the National Museum of American History's ongoing five-year, $18 million effort to clean and conserve the flag in preparation for a new exhibition in 2006. Zoidis estimates at least 14 patches have been cut from the Star-Spangled Banner, which was originally 30 by 42 feet and emblazoned with 15 stars. Today, the flag is eight feet shorter and missing a star. The once-traditional practice of honoring military or civic leaders with the piece of a flag would fall out of favor after the Civil War, she says, after Americans started believing that to cut a flag or let it touch the ground was to desecrate it.

The most recent fragment of the Star-Spangled Banner surfaced last fall, when the U.S. Naval Academy in Annapolis, Maryland, gave the museum a scrap in a small black frame. Taped to the back of the frame was a typewritten account of the scrap's recent history, and beneath that, Zoidis noticed, was another paper. When paper conservator Lynne Gilliland investigated, she found two more messages. All told, the inscriptions identified the remnant's many owners, beginning with Navy seaman Matthew Kelly in 1876. Piecing together the flag's past sometimes takes legwork. Four years ago, Zoidis and conservator Suzanne Thomassen-Krauss heard that a New England auction house was selling "Fort McHenry Flag Remnants." Intrigued, the pair traveled to Portsmouth, New Hampshire, examined the remnants through a magnifying lens and saw that the fabric indeed matched the Star-Spangled Banner, made from a British wool with a distinctive gauze-like weave that enabled the large flag to wave in the breeze from a pole. Zoidis and Thomassen-Krauss kept the discovery to themselves and succeeded in buying the remnants for $3,960; if others had realized the items came from the Star-Spangled Banner itself, says Zoidis, "we could never have afforded them."

The latest fragment (left) of the Star-Spangled Banner (above) to turn up came from the U.S. Naval Academy.

Zoidis has no plans to stitch reclaimed fragments into the flag; no one knows exactly where the pieces belong, and the curators don't want to tamper with what is clearly a national treasure. Instead, the pieces themselves are occasionally displayed. Meanwhile, the curators would love to get their hands on that 15th star.

—*JOHN F. ROSS*

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NATIONAL MUSEUM OF AMERICAN HISTORY, S.I.; RICHARD STRAUSS / OIPPS, S.I.; KENT WOOD / PHOTO RESEARCHERS

Smithsonian
JUNE 2004 VOLUME 35, NUMBER 3

# Treasure Trove

## Our first ever photo contest yields a rich and various bounty

AS WE PORED OVER the more than 12,000 entries for our first photo contest, we were sometimes reminded of Ansel Adams' observation that every picture, even a landscape with no one in it, involves "two people: the photographer and the viewer." We had no idea how much we would enjoy peering through our readers' lenses. We traveled overseas and attended backyard picnics, we admired covered bridges and cracked up at canine antics. And the children! Hundreds of playing, splashing, eating, frowning, laughing kids. We sought entries in five categories corresponding to subjects in which SMITHSONIAN specializes: Americana, The Natural World, Travel, People and The Arts. Many images were extraordinary, and the judging proved daunting (see Editor's Note, page 12). Our 50 finalists hail from 19 states and include young (Lisa Swarbrick, 21) and old (Helen Ruth Johnson, 86), rural (Tennille, Georgia, pop. 1,453) and urban (New York City, pop. 8,084,316). The winners and a selection of runners-up appear in these eight pages. The finalists are posted at www.smithsonianmag.com. Thank you to all who participated. SMITHSONIAN's second photo contest will have the same categories and, in a new twist, will allow entries to be submitted electronically. We'll announce the rules in September. Please, no entries in the meantime! —*HELEN STARKWEATHER*

**GRAND PRIZE WINNER** (OPPOSITE)

**OSCAR WILLIAMS, 59**
**KIRKLAND, WASHINGTON**

PHOTOGRAPHED JULY 2003,
PUERTO VALLARTA, MEXICO

"Just as I snapped the shutter," says Williams, a trumpet player, "this kid ran into the picture. . . . Wow! I knew I had something very special. It was almost spiritual, like going up a stairway to heaven."

**FINALIST, THE NATURAL WORLD**

**SEONACHERIE SANDE, 65**
**LITTLE CANADA, MINNESOTA**

PHOTOGRAPHED MARCH 2001,
SOUTH ISLAND, NEW ZEALAND

Upon entering a New Zealand greenhouse, Sande was immediately attracted by the "textures and patterns" of the resident aloe vera plants.

**WINNER, THE ARTS**

**LINKA A. ODOM, 31**
**WEST HOLLYWOOD, CALIFORNIA**

PHOTOGRAPHED AUGUST 2003, BLACK ROCK DESERT, NEVADA

Odom was at the Burning Man arts festival when she came upon Michael Christian welding the final pieces of his sculpture *Klimax*. "I love the lighting and the sparks from the welder's torch," she says. "It makes me smile."

FINALIST, AMERICANA

**LAURA L. ROBINSON, 42**
**DALLAS, TEXAS**

PHOTOGRAPHED OCTOBER 2003, CRANFILLS GAP, TEXAS

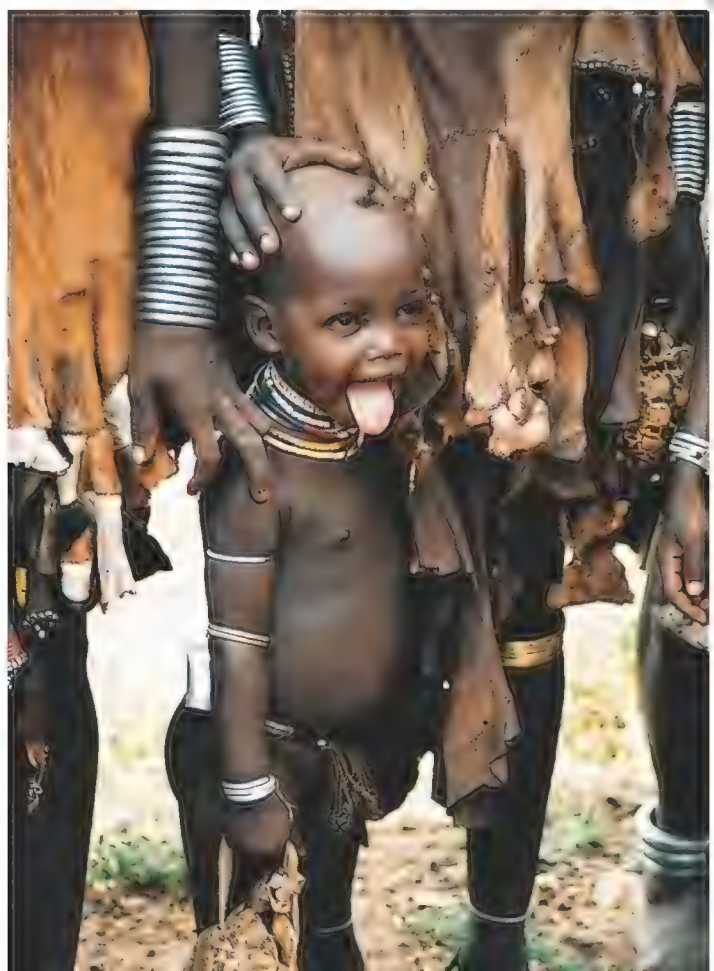
Robinson was drawn to this former Norwegian settlement, where her own grandfather once lived. "The tree with its great arms stretched out and the church underneath . . . these things remind me of the great pioneers of Texas."

FINALIST, AMERICANA

**HELEN RUTH JOHNSON, 86**
**CINCINNATI, OHIO**

PHOTOGRAPHED SUMMER 1948, BRYANT, SOUTH DAKOTA

After World War II "we needed a boost to our spirits," remembers Johnson of the 1948 Ford her family purchased—the first, she says, sold out of Oneida, South Dakota. "We were the envy of the town."



WINNER, PEOPLE

**SARAH T. WOLF, 35**
**SPOKANE, WASHINGTON**

PHOTOGRAPHED DECEMBER 2002, SOUTHERN ETHIOPIA

Wolf, an overland adventure expedition leader in Africa, says this "adorable Hamer child [was] showing off" in the remote tribal areas of Ethiopia's Omo Valley. "His sparkle and charm captured my heart."

**FINALIST, PEOPLE**

**BEN HAYS, 24**
**HELENA, MONTANA**

PHOTOGRAPHED JULY 2002, GUADALAJARA, MEXICO

After lunch with Mexican friends, Hays took the family's three daughters to a park. To take 4-year-old Gabriella Nuño's picture, Hays had to "wrap my camera strap around my neck two and a half times."

**WINNER, THE NATURAL WORLD**

**MARIANNE SOUFAS, 51**
**ASHEVILLE, NORTH CAROLINA**

PHOTOGRAPHED MAY 2003, ASHEVILLE, NORTH CAROLINA

Soufas describes this driveway photo of her dog, a German shorthaired pointer named Grady, as a "rhythmic pattern of spots and rocks" that painter "Georges Seurat might be intrigued by. Pointer-lism, if you will (sorry, Georges)."

FINALIST, THE NATURAL WORLD

**ALEJANDRO ANDREATTA, 41**
**SANTA BARBARA, CALIFORNIA**

PHOTOGRAPHED APRIL 2003,
KSAR GHILANE, TUNISIA

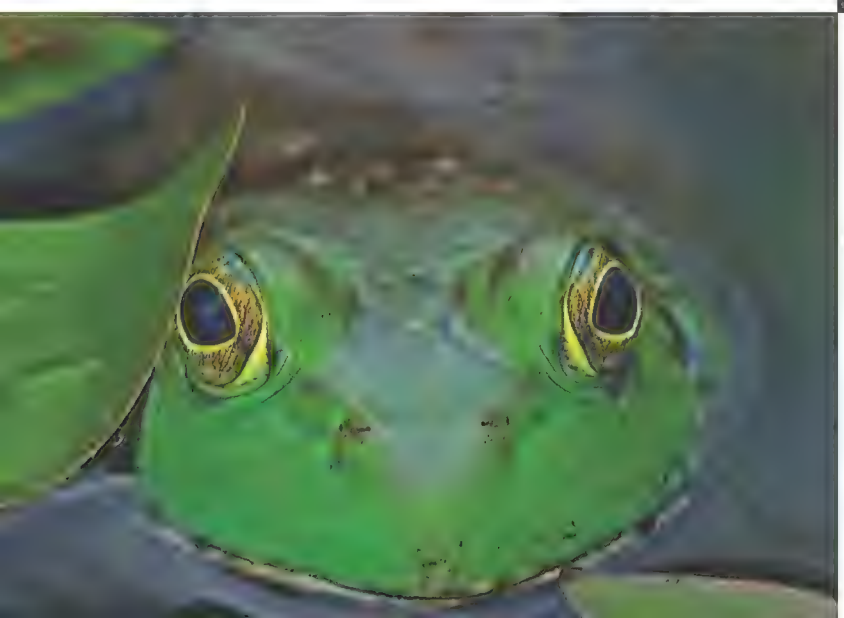
"Despite all the warnings to the contrary," says Andreatta, an engineer, who severely taxed his patience to capture this beetle, "I took my camera into the desert and still have Sahara dust in it to prove it."

FINALIST, AMERICANA

**NILE ROOT, 77**
**TUCSON, ARIZONA**

PHOTOGRAPHED SUMMER 1964,
BIG SPRINGS, NEBRASKA

Root, who died of esophageal cancer as we went to press (but after being notified that he was a finalist), snapped this photograph of his father, Victor (far right), and Victor's dog, Duke.



FINALIST, THE NATURAL WORLD

**PETER M. NOYES, 65**
**WAPAKONETA, OHIO**

PHOTOGRAPHED AUGUST 2003, WAPAKONETA, OHIO

Noyes caught this American bullfrog lurking among the lily pads in a pond near his home. "It seems to me," he observes, "that the number of bullfrogs I see is decreasing as time marches on."

## One dose of Allegra lasts up to 4x longer than one dose of most OTC allergy medicines.*

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Rev. May 2003a
Brief Summary

**ALLEGRA®**
**(fexofenadine hydrochloride)**
**Capsules and Tablets**

**INDICATIONS AND USAGE Seasonal Allergic Rhinitis** ALLEGRA is indicated for the relief of symptoms associated with seasonal allergic rhinitis in adults and children 6 years of age and older. Symptoms treated effectively were sneezing, rhinorrhea, itchy nose/palate/throat, itchy/watery/red eyes. **Chronic Idiopathic Urticaria** ALLEGRA is indicated for treatment of uncomplicated skin manifestations of chronic idiopathic urticaria in adults and children 6 years of age and older. It significantly reduces pruritus and the number of wheals. **CONTRAINDICATIONS** ALLEGRA is contraindicated in patients with known hypersensitivity to any of its ingredients. **PRECAUTIONS Drug Interaction with Erythromycin and Ketoconazole** Fexofenadine hydrochloride has been shown to exhibit minimal (ca. 5%) metabolism. However, co-administration of fexofenadine hydrochloride with ketoconazole and erythromycin led to increased plasma levels of fexofenadine hydrochloride. Fexofenadine hydrochloride had no effect on the pharmacokinetics of erythromycin and ketoconazole. In two separate studies, fexofenadine hydrochloride 120 mg twice daily (two times the recommended twice daily dose) was co-administered with erythromycin 500 mg every 8 hours or ketoconazole 400 mg once daily under steady state conditions to normal, healthy volunteers (n = 24, each study). No differences in adverse events or $QT_c$ interval were observed when patients were administered fexofenadine hydrochloride alone or in combination with erythromycin or ketoconazole. The findings of these studies are summarized in the following table:

**Effects on steady-state fexofenadine hydrochloride pharmacokinetics after 7 days of co-administration with fexofenadine hydrochloride 120 mg every 12 hours (two times the recommended twice daily dose) in normal volunteers (n=24)**

| *Concomitant Drug* | $C_{max ss}$ *(Peak plasma concentration)* | $AUC_{ss,0-12h}$ *(Extent of systemic exposure)* |
|---|---|---|
| Erythromycin (500 mg every 8 hrs) | +82% | +109% |
| Ketoconazole (400 mg once daily) | +135% | +164% |

The changes in plasma levels were within the range of plasma levels achieved in adequate and well-controlled clinical trials. The mechanism of these interactions has been evaluated in *in vitro*, *in situ*, and *in vivo* animal models. These studies indicate that ketoconazole or erythromycin co-administration enhances fexofenadine gastrointestinal absorption. *In vivo* animal studies also suggest that in addition to increasing absorption, ketoconazole decreases fexofenadine hydrochloride gastrointestinal secretion, while erythromycin may also decrease biliary excretion. **Drug Interactions with Antacids** Administration of 120 mg of fexofenadine hydrochloride (2 x 60 mg capsule) within 15 minutes of an aluminum and magnesium containing antacid (Maalox®) decreased fexofenadine AUC by 41% and $C_{max}$ by 43%. ALLEGRA should not be taken closely in time with aluminum and magnesium containing antacids. **Carcinogenesis, Mutagenesis, Impairment of Fertility** The carcinogenic potential and reproductive toxicity of fexofenadine hydrochloride were assessed using terfenadine studies with adequate fexofenadine hydrochloride exposure (based on plasma area under the concentration vs. time [AUC] values). No evidence of carcinogenicity was observed in an 18-month study in mice and in a 24-month study in rats at oral doses up to 150 mg/kg of terfenadine (which led to fexofenadine exposures that were respectively, approximately 3 and 5 times the exposure from the maximum recommended daily oral dose of fexofenadine hydrochloride in adults and children). In *in vitro* (Bacterial Reverse Mutation, CHO/HGPRT Forward Mutation, and Rat Lymphocyte Chromosomal Aberration assays) and *in vivo* (Mouse Bone Marrow Micronucleus assay) tests, fexofenadine hydrochloride revealed no evidence of mutagenicity. In rat fertility studies dose-related reductions in implants and increases in postimplantation losses were observed at an oral dose of 150 mg/kg of terfenadine (which led to fexofenadine hydrochloride exposures that were approximately 3 times the exposure of the maximum recommended daily oral dose of fexofenadine hydrochloride in adults). **Pregnancy Teratogenic Effects: Category C.** There was no evidence of teratogenicity in rats or rabbits at oral doses of terfenadine up to 500 mg/kg (which led to fexofenadine exposures that were approximately 4 and 11 times, respectively, the exposure from the maximum recommended daily oral dose of fexofenadine hydrochloride in adults). There are no adequate and well-controlled studies in pregnant women. Fexofenadine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. **Nonteratogenic Effects.** Dose-related decreases in pup weight gain and survival were observed in rats exposed to an oral dose of 150 mg/kg of terfenadine, approximately 3 times the maximum recommended daily oral dose of fexofenadine hydrochloride in adults based on comparison of fexofenadine hydrochloride AUCs). **Nursing Mothers** There are no adequate and well-controlled studies in women during lactation. Because many drugs are excreted in human milk, caution should be exercised when fexofenadine hydrochloride is administered to a nursing woman. **Pediatric Use** The recommended dose in patients 6 to 11 years of age is based on cross-study comparison of the pharmacokinetics of ALLEGRA in adults and pediatric patients and on the safety profile of fexofenadine hydrochloride in both adult and pediatric patients at doses equal to or higher than the recommended doses. The safety of ALLEGRA tablets at a dose of 30 mg twice daily has been demonstrated in 132 pediatric patients 6 to 11 years of age in 3 placebo-controlled 2 week seasonal allergic rhinitis trials. The safety of ALLEGRA for the treatment of chronic idiopathic urticaria in patients 6 to 11 years of age is based on cross-study comparison of the pharmacokinetics of ALLEGRA in adult and pediatric patients and on the safety profile of fexofenadine in both adult and pediatric patients at doses equal to or higher than the recommended dose. The effectiveness of ALLEGRA for the treatment of seasonal allergic rhinitis in patients 6 to 11 years of age was demonstrated in one trial (n = 411) in which ALLEGRA tablets 30 mg twice daily significantly reduced total symptom scores compared to placebo, along with extrapolation of demonstrated efficacy in patients ages 12 years and above, and the pharmacokinetic comparisons in adults and children. The effectiveness of ALLEGRA for the treatment of chronic idiopathic urticaria in patients 6 to 11 years of age is based on an extrapolation of the demonstrated efficacy of ALLEGRA in adults with this condition and the likelihood that the disease course, pathophysiology and the drug's effects are substantially similar in children to that of adult patients. Three clinical safety studies comparing 15 mg BID (n=85) and 30 mg BID (n=330) of an experimental formulation of fexofenadine to placebo (n=430) have been conducted in pediatric patients aged 6 months to 5 years. In general, fexofenadine hydrochloride was well tolerated in these studies. No unexpected adverse events were seen given the known safety profile of fexofenadine and likely adverse reactions for this patient population. (See ADVERSE REACTIONS and CLINICAL PHARMACOLOGY.) The safety and effectiveness of fexofenadine hydrochloride in pediatric patients under 6 years of age have not been established. **Geriatric Use** Clinical studies of ALLEGRA tablets and capsules did not include sufficient numbers of subjects aged 65 years and over to determine whether this population responds differently from younger patients. Other reported clinical experience has not identified differences in responses between the geriatric and younger patients. This drug is known to be substantially excreted by the kidney, and the risk of toxic reactions to this drug may be greater in patients with impaired renal function. Because elderly patients are more likely to have decreased renal function, care should be taken in dose selection, and may be useful to monitor renal function. (See CLINICAL PHARMACOLOGY). **ADVERSE REACTIONS Seasonal Allergic Rhinitis Adults.** In placebo-controlled seasonal allergic rhinitis clinical trials in patients 12 years of age and older, which included 2461 patients receiving fexofenadine hydrochloride capsules at doses of 20 mg to 240 mg twice daily, adverse events were similar in fexofenadine hydrochloride and placebo treated patients. All adverse events that were reported by greater than 1% of patients who received the recommended daily dose of fexofenadine hydrochloride (60 mg capsules twice daily) and that were more common with fexofenadine hydrochloride than placebo, are listed in Table 1. In a placebo-controlled clinical study in the United States, which included 570 patients aged 12 years and older receiving fexofenadine hydrochloride tablets at doses of 120 or 180 mg once daily, adverse events were similar in fexofenadine hydrochloride and placebo treated patients. Table 1 also lists adverse experiences that were reported by greater than 2% of patients treated with fexofenadine hydrochloride tablets at doses of 180 mg once daily and that were more common with fexofenadine hydrochloride than placebo. The incidence of adverse events, indicating drowsiness, was not dose-related and was similar across subgroups defined by age, gender, and race.

**Table 1**
**Adverse experiences in patients ages 12 years and older reported in placebo-controlled seasonal allergic rhinitis clinical trials in the United States**

**Twice daily dosing with fexofenadine capsules at rates of greater than 1%**

| *Adverse experience* | *Fexofenadine 60 mg Twice Daily* (n=[illegible]) | *Placebo Twice Daily* (n=[illegible]) |
|---|---|---|
| Viral infection (cold, flu) | 2.5% | 1.5% |
| Nausea | 1.6% | 1.5% |
| Dysmenorrhea | 1.5% | 0.6% |
| Drowsiness | 1.3% | 0.9% |
| Dyspepsia | 1.1% | 0.6% |
| Fatigue | 1.3% | 0.9% |

**Once daily dosing with fexofenadine hydrochloride tablets at rates of greater than 2%**

| *Adverse experience* | *Fexofenadine 180 mg once daily* (n=262) | *Placebo* (n=293) |
|---|---|---|
| Headache | 16.6% | 15% |
| Upper Respiratory Tract Infection | 3.2% | 1.4% |
| Back Pain | 2.8% | 1.4% |

The frequency and magnitude of laboratory abnormalities were similar in fexofenadine hydrochloride and placebo-treated patients. **Pediatric.** Table 2 lists adverse experiences in patients aged 6 to 11 years of age which were reported by greater than 2% of patients treated with fexofenadine hydrochloride tablets at a dose of 30 mg twice daily in placebo-controlled seasonal allergic rhinitis studies in the United States and Canada that were more common with fexofenadine hydrochloride than placebo.

**Table 2**
**Adverse experiences reported in placebo-controlled seasonal allergic rhinitis studies in pediatric patients ages 6 to 11 in the United States and Canada at rates of greater than 2%**

| *Adverse experience* | *Fexofenadine 30 mg twice daily* (n=209) | *Placebo* (n=229) |
|---|---|---|
| Headache | 7.2% | 6.6% |
| Accidental Injury | 2.9% | 1.3% |
| Coughing | 3.8% | 1.3% |
| Fever | 2.4% | 0.9% |
| Pain | 2.4% | 0.9% |
| Otitis Media | 2.4% | 0.9% |
| Upper Respiratory Tract Infection | 4.3% | 1.7% |

Three clinical safety studies in 845 children aged 6 months to 5 years comparing 15 mg BID (n=85) and 30 mg BID (n=330) of an experimental formulation of fexofenadine to placebo (n=430), have been conducted. In general, fexofenadine hydrochloride was well tolerated in these studies. No unexpected adverse events were seen given the known safety profile of fexofenadine and likely adverse reactions for this patient population. (See PRECAUTIONS Pediatric Use.) **Chronic Idiopathic Urticaria** Adverse events reported by patients 12 years of age and older in placebo-controlled chronic idiopathic urticaria studies were similar to those reported in placebo-controlled seasonal allergic rhinitis studies. In placebo-controlled chronic idiopathic urticaria clinical trials, which included 726 patients 12 years of age and older receiving fexofenadine hydrochloride tablets at doses of 20 to 240 mg twice daily, adverse events were similar in fexofenadine hydrochloride and placebo-treated patients. Table 3 lists adverse experiences in patients aged 12 years and older which were reported by greater than 2% of patients treated with fexofenadine hydrochloride 60 mg tablets twice daily in controlled clinical studies in the United States and Canada and that were more common with fexofenadine hydrochloride than placebo. The safety of fexofenadine hydrochloride in the treatment of chronic idiopathic urticaria in pediatric patients 6 to 11 years of age is based on the safety profile of fexofenadine hydrochloride in adults and adolescent patients at doses equal to or higher than the recommended dose (see Pediatric Use).

**Table 3**
**Adverse experiences reported in patients 12 years and older in placebo-controlled chronic idiopathic urticaria studies in the United States and Canada at rates of greater than 2%**

| *Adverse experience* | *Fexofenadine 60 mg twice daily* (n=[illegible]) | *Placebo* (n=378) |
|---|---|---|
| Back Pain | 2.2% | 1.1% |
| Sinusitis | 2.2% | 1.1% |
| Dizziness | 2.2% | 0.6% |
| Drowsiness | 2.2% | 0.0% |

Events that have been reported during controlled clinical trials involving seasonal allergic rhinitis and chronic idiopathic urticaria patients with incidences less than 1% and similar to placebo and have been rarely reported during postmarketing surveillance include: insomnia, nervousness, and sleep disorders or paroniria. In rare cases, rash, urticaria, pruritus and hypersensitivity reactions with manifestations such as angioedema, chest tightness, dyspnea, flushing and systemic anaphylaxis have been reported. **OVERDOSAGE** Reports of fexofenadine hydrochloride overdose have been infrequent and contain limited information. However, dizziness, drowsiness, and dry mouth have been reported. Single doses of fexofenadine hydrochloride up to 800 mg (six normal volunteers at this dose level), and doses up to 690 mg twice daily for 1 month (three normal volunteers at this dose level) or 240 mg once daily for 1 year (231 normal volunteers at this dose level) were administered without the development of clinically significant adverse events as compared to placebo. In the event of overdose, consider standard measures to remove any unabsorbed drug. Symptomatic and supportive treatment is recommended. Hemodialysis did not effectively remove fexofenadine hydrochloride from blood (13% removed) following terfenadine administration. No deaths occurred at oral doses of fexofenadine hydrochloride up to 5000 mg/kg in mice (1110 times the maximum recommended daily oral dose in adults and 200 times the maximum recommended daily oral dose in children based on mg/m²), and up to 5000 mg/kg in rats (2310 times the maximum recommended daily oral dose in adults and 400 times the maximum recommended daily oral dose in children based on mg/m²). Additionally, no clinical signs of toxicity or gross pathological findings were observed in dogs, no evidence of toxicity was observed at oral doses up to 2000 mg/kg (340 times the maximum recommended daily oral dose in adults and 520 times the maximum recommended daily oral dose in children based on mg/m²). **DOSAGE AND ADMINISTRATION Seasonal Allergic Rhinitis Adults and Children 12 Years and Older.** The recommended dose of ALLEGRA is 60 mg twice daily, or 180 mg once daily. A dose of 60 mg once daily is recommended as the starting dose in patients with decreased renal function (see CLINICAL PHARMACOLOGY). **Children 6 to 11 Years.** The recommended dose of ALLEGRA is 30 mg twice daily. A dose of 30 mg once daily is recommended as the starting dose in pediatric patients with decreased renal function (see CLINICAL PHARMACOLOGY). **Chronic Idiopathic Urticaria Adults and Children 12 Years and Older.** The recommended dose of ALLEGRA is 60 mg twice daily. A dose of 60 mg once daily is recommended as the starting dose in patients with decreased renal function (see CLINICAL PHARMACOLOGY). **Children 6 to 11 Years.** The recommended dose of ALLEGRA is 30 mg twice daily. A dose of 30 mg once daily is recommended as the starting dose in pediatric patients with decreased renal function (see CLINICAL PHARMACOLOGY).

Please see product circular for full prescribing information.

**Rx only**

Rev. May 2003a
Brief Summary
Aventis Pharmaceuticals Inc.
Kansas City, MO 64137 USA
US Patents 4,254,129; 5,375,693; 5,578,610
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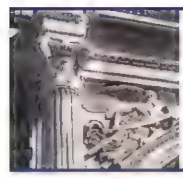

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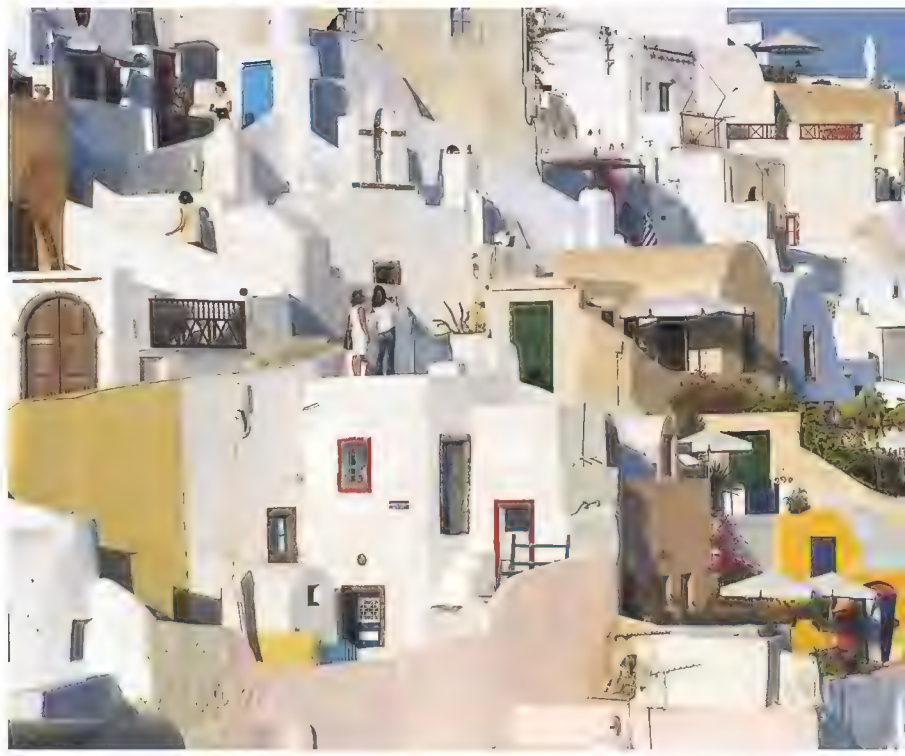
**FINALIST, TRAVEL**

**KATHY UDELL, 45**
**ALEXANDRIA, VIRGINIA**

PHOTOGRAPHED SEPTEMBER 2003, SANTORINI, GREECE

Udell says of these island houses: "It gives me the impression of a miniature world come to life. The interesting shapes, sizes and colors make me want to explore the different buildings and hidden pathways."



**FINALIST, THE ARTS**

**TIM GRUBER, 25**
**FREEPORT, MINNESOTA**

PHOTOGRAPHED AUGUST 2003, CHICAGO, ILLINOIS

What intrigues Gruber about this photograph taken at Chicago's Art Institute is that "the [museumgoer] looks like she belongs in the painting, despite everything telling us she doesn't."

FINALIST, TRAVEL

**BLAKE SHAW, 45**
**SAN DIEGO, CALIFORNIA**

PHOTOGRAPHED MARCH 1994,
HANGZHOU, CHINA

"I spent six weeks in Hangzhou," says Shaw, an ophthalmologist, "and the day before I left, spring arrived and the cherry trees around the lake started to bloom."

FINALIST, THE NATURAL WORLD

**CARLOS L. ESGUERRA, 63**
**ELMHURST, NEW YORK**

PHOTOGRAPHED NOVEMBER 2001,
BLUFF, UTAH

Esguerra, a retired computer consultant, was attending an amateur photography workshop in Monument Valley when, he says, the cat's-face cloud spoke to him. "Here I am," it meowed, "capture my image!"

WINNER, AMERICANA

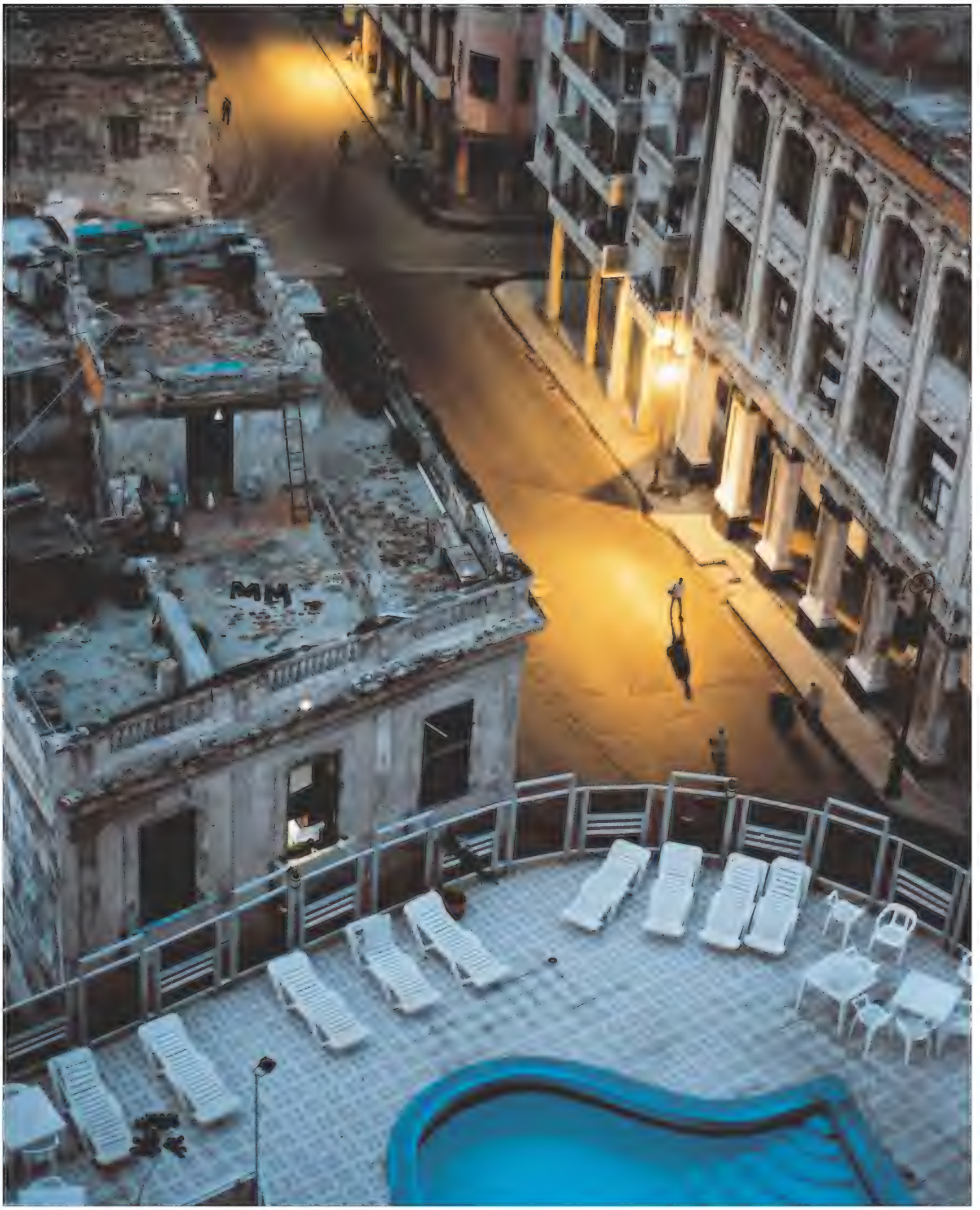
**IRENE BARON, 65**
**ZANESVILLE, OHIO**

PHOTOGRAPHED SEPTEMBER 2003,
ZANESVILLE, OHIO

Science teacher and pilot Irene Baron spotted these flags from a Cessna 172 during her town's bicentennial celebration. Baron says that event coordinators instructed the people carrying them "via loudspeaker" to smile for the camera.



CONTINUED ON PAGE 69



**WINNER, TRAVEL**

**SUSAN PYBURN, 62**
**CAMBRIA, CALIFORNIA**

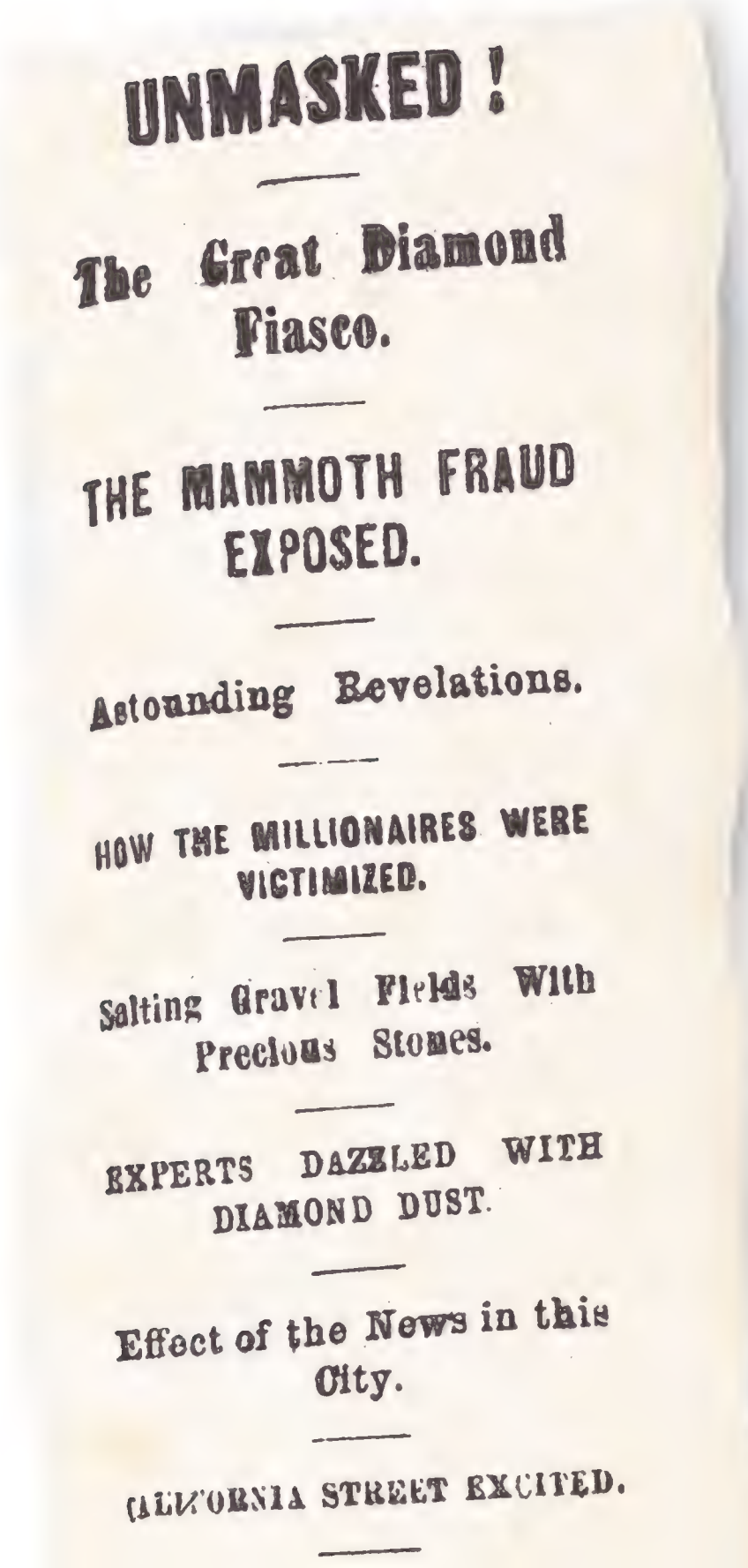
PHOTOGRAPHED NOVEMBER 2003, HAVANA, CUBA

Pyburn had just settled into her 14th-floor hotel room when she looked down at an "old street slicing through the city, fat pillars of buildings in deep disrepair. . . . I now see that the juxtaposition of rooftops sets up an intriguing study of present-day life in Havana."

# THE GREAT DIAMOND HOAX OF 1872

**How a Kentucky grifter and his partner pulled off one of the era's most spectacular scams—until a dedicated man of science exposed their scheme**

*BY ROBERT WILSON*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HOW THE MILLIONAIRES WERE VICTIMIZED.

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Effect of the News in this City.

CALIFORNIA STREET EXCITED.

**The rush for gold** that began in California in 1848 and for silver in Nevada in 1859 filled the West with people hooked on the Next Big Thing. From grubby prospectors washing dirt in a thousand Western streams to bankers and speculators in San Francisco, New York and London, everyone, it seems, embraced the idea that the West's mountains and riverbeds held an abundance of mineral wealth there for the taking.

An announcement in the Tucson *Weekly Arizonian* in April of 1870 catches the mood of the moment: "We have found it! The greatest treasures ever discovered on the continent, and doubtless the greatest treasures ever witnessed by the eyes of man." Located in the Pyramid Mountains of New Mexico, the "it" was a new mine dubbed the Mountains of Silver. Bankers hurried in, miners claimed stakes, investors sought capital in distant cities and surveyors laid out a town nearby. But in the end, the much-touted venture did not yield enough of the stuff for a single belt buckle.

At about the same time came news of a diamond rush in South Africa, the third major diamond find known to the world after one near the city of Golconda, India, and an 18th-century site discovered by the Portuguese in Brazil. Stoked by the tall tales of early 19th-century trapper-guides like Jim Bridger and Kit Carson about diamonds, rubies and other gems that could be scooped right off the ground, avaricious dreamers were soon looking for precious stones in Arizona and New Mexico, where the terrain was said to resemble South Africa's. An odd diamond or two had actually turned up during the gold rush, especially near Placerville, California. In a report on the phenomenon, a state geologist helpfully recommended that "though it may not pay to hunt for diamonds, yet it always pays to pick them up when you do happen to see them."

Con artist Philip Arnold (opposite, with some of the diamonds he used to fool investors) was the brains behind the scam. He managed to walk away from the hoax with more than half a million dollars and return home to Elizabethtown, Kentucky.

And so the stage was set for the Great Diamond Hoax, a brilliantly acted scam by two Kentucky grifters that would embroil, among others, some of California's biggest bankers and businessmen, a former commander of the Union Army, a U.S. representative, leading lawyers on both coasts, and the founder of Tiffany & Co. Accurately described by the San Francisco *Chronicle* in 1872 as "the most gigantic and barefaced swindle of the age," the scheme was also noteworthy for the manner of its unraveling and its colorful characters. Not only did it propel to prominence a geologist later befriended and admired by Theodore Roosevelt, it also gave a fed-up American public some hope that honest science could triumph, at least occasionally, over hucksterism and greed.

**Swelled by the completion** of the transcontinental railroad in 1869, the San Francisco of 1870 was a city of some 150,000 souls. One of them was Philip Arnold, a Kentuckian born in the same county as Abraham Lincoln. A poorly educated former hatter's apprentice, Mexican War veteran and gold rush forty-niner, Arnold had spent two decades working in mining operations in the West, making enough money to pay for periodic visits back to Kentucky, where he bought a farm, married, started a family and perhaps stashed a little cash. In 1870, he was working as an assistant bookkeeper for the Diamond Drill Co., a San Francisco drill maker that used diamond-headed bits. For a bookkeeper, Arnold, then just past 40, showed a surprising interest in the industrial-grade diamonds that kept the drills running. He even plowed through learned works on the subject.

By November of that year, Arnold had acquired a bag of uncut diamonds, presumably taken from his employer, and mixed them with garnets, rubies and sapphires that he likely bought from Indians in Arizona. He also had acquired a partner, John Slack, an aptly named older cousin from Kentucky who, like Arnold, had fought in the Mexican War and had gone after gold in 1849. Indeed, in the months ahead, as the two men hatched their scheme, Slack played the listless, taciturn foil to the voluble and cunning Arnold.

The first person the pair approached was George D. Roberts, the sort of businessman described in newspapers as prominent, but his was a prominence earned by moving fast and not asking too many questions. Arnold and Slack turned up one night at Roberts' San Francisco office, looking weather-beaten and clutching a small leather bag. Inside was something of great value, they said, which they would have deposited in the Bank of California except for the late hour. The two men feigned a reluctance to talk about what was in the sack until Arnold allowed himself to let slip the words "rough diamonds." But Arnold and Slack were more circumspect about where they'd found the jewels, mumbling something about Indian territory, an answer that carried a certain truth, but not in the way Roberts took it.

The bag of diamonds sank the hook deep. "Roberts was very much elated by our discovery," Arnold told the Louisville *Courier-Journal* in December 1872, soon after their scheme had been exposed, "and promised Slack and myself to keep it a profound secret until we could explore the country further and ascertain more fully the extent of our discoveries." Like many able liars, Arnold had an intuitive sense of how others would react to his fictions. What better way to get Roberts to spread the word than to make him swear an oath of silence?

Arnold spread rumors that the diamond field was in Arizona or New Mexico. But in November 1872, a map in the San Francisco *Chronicle* placed it in northwest Colorado—just south of its real location.

Almost before his office door banged shut behind the two miners, Roberts broke his promise. First he told the founder of the Bank of California, William C. Ralston, a legendary financier who built hotels and mills and invested in almost everything else, including the Comstock Lode and the completion of the transcontinental railroad when the so-called Big Four—Collis Huntington, Leland Stanford, Mark Hopkins and Charles Crocker—came up a little short. The banker had also put money into the Mountains of Silver venture, and in return, the nearby town of Grant had been courteously restyled Ralston, New Mexico. Then Roberts got word to the theatrically named Asbury Harpending, who was in London trying to float a stock offering for the Mountains of Silver. Harpending swallowed the bait as hungrily as Roberts had. As Harpending, an even shadier businessman than Roberts, recalled 45 years later in *The Great Diamond Hoax and Other Stirring Incidents in the Life of Asbury Harpending*, his colorful and mendaciously self-serving memoir, he knew that "they had got something that would astonish the world." He made his way to San Francisco "as fast as steamships and railroads would carry us," arriving back home in May 1871.

In the meantime, Arnold and Slack led Roberts to believe

*ROBERT WILSON, former editor of* Preservation, *is writing a biography of Clarence King. This is his first article for* SMITHSONIAN.

P. 70 KENNETH HAYDEN; P. 71-72 SAN FRANCISCO CHRONICLE

The 3,000-acre claim made by the San Francisco and New York Mining and Commercial Company included areas such as Ruby Gulch (in 1981), Diamond Flat, Sapphire Hollow "and other locations with names equally suggestive of wealth without limit," as one investor put it.

that they had made another visit to the diamond field and had returned with 60 pounds of diamonds and rubies said to be worth $600,000. More convinced than ever, Roberts drew others into the trap with this second, bigger bag of jewels, which he claimed a local jeweler had authenticated. Roberts, Ralston, Harpending and now San Francisco mining entrepreneurs William Lent and Gen. George S. Dodge wanted to get Arnold and Slack out of the picture as soon as possible by buying out their interests. At first, the two prospectors appeared to resist a quick payday. But then Slack asked for $100,000 for his share—$50,000 now and $50,000 after the two made what they claimed would be a third visit to the diamond field.

Once Slack got his first 50 grand, he and Arnold headed off to England to buy uncut gems. In July 1871, under assumed names—Arnold was Aundel and Slack used his middle name, Burcham—they bought $20,000 worth of rough diamonds and rubies, thousands of stones in all, from a London diamond merchant named Leopold Keller. "I asked them where they were going to have the diamonds cut," Keller later testified in a London court, but of course they never intended to cut the stones. Some would go to San Francisco as further evidence of the richness of their find. Others would be planted in the still secret field for their investors to discover.

Upon the pair's return to San Francisco in the summer of 1871, Arnold and Slack offered to make one more trip to the diamond field, promising to return with "a couple of million dollars' worth of stones," which they would allow the businessmen to hold as a guarantee of their investment. Off the pair went, to salt the fields rather than mine them, and when that was done, Harpending met their train at Lathrop, California, a junction east of San Francisco. Harpending would later write of the encounter: "Both were travel stained and weather beaten and had the general appearance of having gone through much hardship and privation." Slack was asleep but "Arnold sat grimly erect like a vigilant old soldier with a rifle by his side, also a bulky looking buckskin package." The two claimed that they had indeed happened upon a spot yielding the promised $2 million worth of diamonds, which, they said, they had divided into two packs. But while crossing a river in a raft they had built, one pack was lost, leaving only the one Harpending now observed.

At Oakland, the swindlers handed the pack to Harpending, who gave them a receipt for it and carried it onto the ferry to cross the bay. "Arrived at San Francisco, my carriage was waiting and drove me swiftly to my home," where the other investors were waiting, he wrote. "We did not waste time on ceremonies. A sheet was spread on my billiard table; I cut the

GRAHAM EGERTON

elaborate fastenings of the sack and, taking hold of the lower corners, dumped the contents. It seemed," Harpending wrote, "like a dazzling, many-colored cataract of light."

**As bedazzled** as they may have been, Ralston and the others were not complete fools. Before risking more money, they decided to bring 10 percent of the latest bag of gems to jeweler Charles Lewis Tiffany in New York City for appraisal and to hire a mining engineer to check out the diamond field. They also allowed a generous sampling of the stones to go on display in the window of San Francisco jeweler William Willis, feeding the city's diamond fever—and potentially increasing the value of their future investments.

In New York City, Harpending, Lent and Dodge hired a corporate lawyer, Samuel Barlow, a Ralston friend, to handle their interests in the East. Sometime in October 1871, the group met at Barlow's house on the corner of 23rd Street and Madison Avenue for the appraisal. Joining them were Charles Lewis Tiffany and two Civil War generals: George B. McClellan, who had commanded the Union Army and run against Lincoln for president, and Benjamin F. Butler, nicknamed Beast for his treatment of civilians in New Orleans during the war. McClellan was recruited to the venture in the hope that his name might attract other investors, and Barlow recommended Butler—by then a U.S. representative—as someone to help resolve any legal issues in Congress if the diamond field was revealed to be on federal land. Also present was Horace Greeley, editor of the New York *Tribune* (who was about to run for president himself), though his exact role is unknown.

From left: Financier Asbury Harpending was accused of complicity in the fraud; former Union Army commander George B. McClellan became a company director; editor Horace Greeley of the New York *Tribune* met with diamond field investors in New York.

Imagine the theatrical flourish with which Harpending must have opened the bag of diamonds before this august assemblage. Tiffany fussily sorted the stones, which also included some rubies, emeralds and sapphires, "viewed them gravely," Harpending writes, and "held them up to the light, looking every whit the part of a great connoisseur." Once he finished his inspection, he delivered a preliminary verdict. "Gentlemen, these are beyond question precious stones of enormous value." How valuable he could not say until he had taken them back to the shop and let his lapidary have a look. Two days later he reported that the stones—only a fraction of those that Arnold and Slack had bought in London for $20,000—were worth $150,000. Harpending did a little multiplication and concluded that Arnold's million-dollar sack must be worth at least $1.5 million.

When word of the appraisal reached him, Arnold could not believe his luck. His little scheme now carried the imprimatur of the country's most famous jeweler. (After the hoax had been revealed, it came out that neither Tiffany nor his lapidary had much experience with uncut stones.) Arnold quickly extracted another $100,000 from the investors and scurried back to London, where he spent $8,000 on more uncut gems from Leopold Keller, the better to further prepare the bogus diamond field for Henry Janin, a well-respected mining engineer selected by the San Francisco investors.

Because of cold weather, Janin did not visit the fields until June. Arnold and Slack, who by then had been paid his second $50,000, met Janin, Dodge, Harpending and an English crony of Harpending's named Alfred Rubery in St. Louis, where the group boarded a Union Pacific train to Rawlins, Wyoming. Though the spot that Arnold had picked to salt was closer to the Black Buttes, Wyoming, station, the swindler wanted to keep the exact location secret, so he led them on a confusing four-day horseback journey, often pretending to be lost and climbing hills to get his bearings. Harpending noted that "the party became cross and quarrelsome." The six men finally reached the salted mesa at about four o'clock on the afternoon of June 4, 1872, and began at once to look for diamonds. Like a mother at a backyard Easter egg hunt, Arnold was extraordinarily solicitous in suggesting where they might dig. "After a few minutes," Harpending would write, "Rubery gave a yell. He held up something glittering in his hand. . . . For more than an hour, diamonds were being found in profusion, together with occasional rubies, emeralds and sapphires. Why a few pearls weren't thrown in for good luck I have never yet been able to tell. Probably it was an oversight."

Within two days, even the mining engineer Janin, who in addition to his $2,500 fee had been given the right to purchase 1,000 shares of stock in the new venture at $10 a share, was, as Harpending later recalled, "wildly enthusiastic." On the chance that the surrounding land might also yield gems, Janin got busy staking out 3,000 acres, although the area salted with diamonds amounted to barely more than one acre. In his concluding report Janin wrote that the proposed 100,000 shares of stock were easily worth $40 each, and he would soon thereafter sell his shares at that price, netting $30,000 above his fee and becoming the only nonswindler to profit from the scam. When the rest of the party finished up at the mesa, they left Slack and Rubery behind to guard the site. But the two men did not like each other, and within a couple of days they took off.

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Slack was never to be heard from again. Arnold collected another $150,000 that had been promised him after the Janin inspection and then quickly sold $300,000 more in stock to Harpending, making his total take $550,000, less expenses—about $8 million today. He had more shares coming to him, but he must have sensed that his luck would only take him so far. He had already moved his family back to Kentucky from San Francisco in the spring of 1872, and by the time the affair was exposed, he, too, had left town.

**What finally led** to the hoax's collapse was a lucky encounter on an Oakland-bound train between Janin and members of a government survey team led by Clarence King, a Yale-educated geologist. One of a special breed of explorer-scientists drawn to the trackless expanse west of the 100th meridian and east of the Sierra Nevada, King had come West in 1863 at the age of 21, traveling by wagon train with a friend and joining the California Geological Survey. He was the first man known to have ascended several of the highest Sierra Nevada peaks, and he gave Mount Whitney its name (after Josiah D. Whitney, leader of the California survey); another mountain in the southern Sierra would be named after him. At the age of 25, King convinced the U.S. Congress to fund and appoint him geologist in charge of his own federal survey, which would cover 80,000 square miles of mostly inhospitable land between the Rockies and the Sierra—an 800-mile-long rectangle that followed the route of the transcontinental railway in a swath 100 miles wide. By the early 1870s, King or the three dozen men under his command had surveyed, mapped and described the whole immense patch of the West within their domain, and the fieldwork for what was known as the Fortieth Parallel Survey was nearly done.

From left: Bank of California founder William Ralston lost $250,000; Charles Lewis Tiffany wildly overestimated the diamonds' value; former general Benjamin Butler—then a U.S. congressman—expedited legislation favorable to investors.

In his diary for October 6, 1872, one of King's men, geologist Samuel F. Emmons, wrote that "suspicious looking characters on the train are returning diamond hunters. Henry [Janin] shows us some of the diamonds—pretty crystals." King and his team had hardly been ignorant of the rising diamond fever, but most of the rumored discoveries had been in Arizona and New Mexico, outside the survey's purview. Now Janin's comments and other hints suggested that the spot was in the northwest corner of Colorado, not far from where Emmons had been working. The news was alarming. A major discovery of diamonds in the area by anyone other than King's men would call into question the thoroughness of their work and give ammunition to those in Congress who fought the survey's annual appropriations.

King and his men decided that they had better inspect the diamond fields as soon as possible. On October 21, 1872, Emmons and A. D. Wilson, a topographer on King's team, got on a train from Oakland east to Fort Bridger, Utah, where they had boarded some mules for the winter. King followed the next day.

A week and a half later, having gathered supplies at the fort, King, Emmons, Wilson and two packers set off on what would become a bitterly cold 150-mile journey to the vicinity of Janin's site, which they had deduced from their own fieldwork and other clues. After five days of hard travel, they set up camp and immediately began looking around. Before long they saw a claim notice posted by Janin. According to Emmons' field notes, they followed other posted notices until they "came upon a bare iron-stained bit of coarse sandstone rock about a hundred feet long. . . . Throwing down our bridle reins we began examining the rock on our hands and knees, and in another instant I had found a small ruby. This was indeed the spot. The diamond fever had now attacked us with vigor, and while daylight lasted we continued in this position picking up precious stones. . . . And when a diamond was found it was quite a time before our benumbed fingers could succeed in grasping the tiny stone." When they went to bed that night, they "dreamed," Emmons wrote, "of the untold wealth that might be gathered."

But the next day, King noticed that wherever he found a diamond, he also found a dozen rubies, too neat a scheme for a natural deposit. The men also realized that the stones were found only in disturbed ground. Rubies found in anthills, for instance, were not only surrounded by footprints but "beside the top hole by which the ants made their exit, there was visible in the side another small break in the crust." Anthills lacking footprints or broken crusts invariably also lacked rubies. "Our explanation," Emmons wrote, "was that some one must have pushed in a ruby or two on the end of a stick." The men spent the next two days doing more tests, which included digging a trench ten feet deep in a gulch where diamonds should have been distributed well below the surface. But there were no diamonds in it.

On their fourth day at the site, King and his men were approached by a man on a horse, "a stout party, city dressed, and looking very much out of keeping with his surroundings." "Have you found any carats around here?" the stranger asked. One of King's men blurted out news of the fraud, which the man received with the response: "What a chance to sell short on the stock." He introduced himself as J. F. Berry, a New York diamond dealer who had followed King's

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party from Fort Bridger and had been watching them with a spyglass from the top of a nearby butte.

In camp that evening, King decided, as he later wrote to his boss in Washington, "to go at once to San Francisco, and find out the status of the Company, and prevent if possible further transactions in the stock." King would also claim that he hurried off to prevent Berry from acting on the knowledge one of his men had blurted out. But it's even more likely that the self-assured young geologist didn't want this irritating interloper revealing the fraud before he could. In any event, King and Wilson left camp well before dawn, riding the 45 miles to Black Buttes Station "across a pathless reach of desert and mountain," arriving in San Francisco on November 10. King went at once to Janin's hotel. "Through nearly all the night I detailed to him the discovery," King later wrote, "and at last convinced him of its correctness."

The next morning King and Janin met the duped directors at Ralston's office at the Bank of California. There, King read aloud a letter he had written for publication asserting that the diamond fields were "utterly valueless" and that the directors had been the victims of an "unparalleled fraud." He spelled out the tests his men had made on the site. The investors were astonished," King would write, "and thrown into utter consternation." Emmons later related that one of the directors, no doubt hoping to sell short himself, suggested that King might gain financially if he were to sit on the news for a few days. King supposedly responded: "There is not enough money in the Bank of California to make me delay the publication a single hour." The board agreed to stop a planned sale of 100,000 shares of stock at $100 a share; the directors then persuaded King to lead another party, including Janin and other company representatives, back to the spot. The group set out the next day and, upon arrival, made its inspection in weather so cold that one man's whiskey was said to have frozen in the bottle. On November 25, inspection party member Gen. David Colton, who had become general manager of the company just three weeks before, reported back to the directors that he had seen rubies scattered on a bare rock, where "it would have been as impossible for Nature to have deposited them as for a person standing in San Francisco to toss a marble in the air and have it fall on Bunker Hill monument." Upon receiving this and other reports from the latest inspection, along with a lame attempt by Janin to explain his failure to unearth the fraud months before, the directors voted to publish King's letter and dissolve the company.

**The San Francisco** *Chronicle* on November 26 stacked headlines that began with "UNMASKED!" followed by "The Great Diamond Fiasco," "THE MAMMOTH FRAUD EXPOSED" and "Astounding Revelations." Because Arnold and Slack had long departed from the scene, reporters focused on the company's gullible principals. The *Chronicle* chortled at "how the millionaires were victimized." Janin the mining engineer was criticized for being so easily duped. Harpending came under suspicion as a perpetrator of the fraud because he was reported to have been in London at the time of one of Arnold's diamond-buying sprees. General Butler was discovered to have received a thousand shares of stock for shepherding a mining act through Congress that had enabled the company to buy the federal land that held the bogus diamond fields. William Lent claimed in a lawsuit that he lost some $350,000, and it was widely reported that Ralston lost $250,000.

Led by Clarence King, the Fortieth Parallel Survey corps (in Utah's Wasatch Mountains in 1869) mapped some 80,000 square miles between the Rockies and the Sierra—including the area around the mesa in Colorado that Philip Arnold salted with diamonds.

John Slack was assumed to have either fled the country or died soon after leaving the diamond fields with Rubery. But in 1967, Bruce A. Woodard, an accountant who had become obsessed with the hoax, asserted in his book, *Diamonds in the Salt*, that Slack had taken a job building caskets in St. Louis. Eventually, according to Woodard, Slack moved to White Oaks, New Mexico, where he became an undertaker, living alone until his death at age 76 in 1896. He left behind an estate of $1,600.

In July 1872, according to court papers quoted by Woodard, Philip Arnold bought a two-story brick house in Elizabethtown, Kentucky, and moved his family into it. After acquiring some 500 acres nearby—all of the property was in his wife Mary's name—he bred horses, sheep and pigs. A grand jury in San Francisco indicted Arnold and Slack for fraud, but the contents of the indictment were never revealed, and Woodard speculates that they were quashed by the investors to avoid further bad publicity. Arnold answered the news of the indictments by telling the Louisville paper

TIMOTHY O'SULLIVAN / GEORGE EASTMAN HOUSE, ROCHESTER, NY

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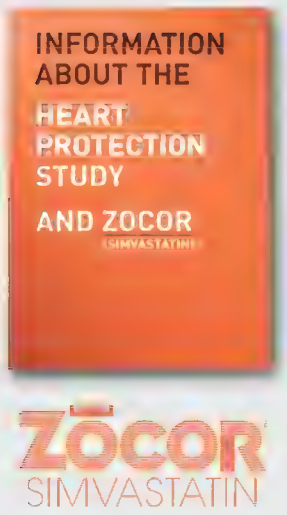


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- **Cyclosporine, itraconazole, ketoconazole, erythromycin, clarithromycin, HIV protease inhibitors, the antidepressant nefazodone, or large quantities of grapefruit juice (>1 quart daily), particularly with higher doses of ZOCOR.**
- **Gemfibrozil particularly with higher doses of ZOCOR.**
- **Other lipid lowering drugs (other fibrates or ≥1 g/day of niacin) that can cause myopathy when given alone.**
- **Amiodarone or verapamil with higher doses of ZOCOR.**

**The risk of muscle breakdown is greater at higher doses of simvastatin.**

**Because the risk of muscle side effects is greater when ZOCOR is used with the products listed above, the combined use of these products should be avoided unless your doctor determines the benefits are likely to outweigh the increased risks.**

**The dose of ZOCOR should not exceed 10 mg daily in patients receiving gemfibrozil. The combined use of ZOCOR and gemfibrozil should be avoided, unless your doctor determines that the benefits outweigh the increased risks of muscle problems. Caution should be used when using ZOCOR with other fibrates or niacin because these can cause muscle problems when taken alone.**

**No more than 10 mg/day of ZOCOR should be taken with cyclosporine.**

**The combined use of verapamil or amiodarone with doses above ZOCOR 20 mg should be avoided unless your doctor determines the benefits outweigh the increased risk of muscle breakdown.**

**Your doctor should also carefully monitor for any muscle pain, tenderness, or weakness, particularly during the initial months of therapy and if the dose of either drug is increased. Your doctor also may monitor the level of certain muscle enzymes in your body, but there is no assurance that such monitoring will prevent the occurrence of severe muscle disease.**

**The risk of muscle breakdown is greater in patients with kidney problems or diabetes.**

**If you have conditions that can increase your risk of muscle breakdown, which in turn can cause kidney damage, your doctor should temporarily withhold or stop ZOCOR. Also, since there are no known adverse consequences of briefly stopping therapy with ZOCOR, treatment should be stopped a few days before elective major surgery and when any major acute medical or surgical condition occurs. Discuss this with your doctor, who can explain these conditions to you.**

**Liver: About 1% of patients who took ZOCOR in clinical trials developed elevated levels of some liver enzymes.** Patients who had these increases usually had no symptoms. Elevated liver enzymes usually returned to normal levels when therapy with ZOCOR was stopped.

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**Your doctor should perform routine blood tests to check these enzymes before you start treatment with ZOCOR and thereafter when clinically indicated. Patients titrated to the 80-mg dose should receive an additional test at 3 months and periodically thereafter (eg, semiannually) for the first year of treatment.** If your enzyme levels increase, your doctor should order more frequent tests. If your liver enzyme levels remain unusually high, your doctor should discontinue your medication.

Tell your doctor about any liver disease you may have had in the past and about how much alcohol you consume. ZOCOR should be used with caution in patients who consume large amounts of alcohol.

### PRECAUTIONS

**Drug Interactions:** Because of possible serious drug interactions, it is important to tell your doctor what other drugs you are taking, including those obtained without a prescription. You should also tell other doctors who are prescribing a new medicine for you that you are taking ZOCOR® (simvastatin). ZOCOR can interact with the following:

- Itraconazole
- Ketoconazole
- Erythromycin
- Clarithromycin
- HIV protease inhibitors
- Nefazodone
- Cyclosporine
- Large quantities of grapefruit juice (>1 quart daily)

The risk of myopathy is also increased by gemfibrozil and to a lesser extent other fibrates and niacin (nicotinic acid) (≥1 g/day).

The risk of muscle breakdown is increased with other drugs:

- Amiodarone
- Verapamil

Some patients taking lipid-lowering agents similar to ZOCOR and coumarin anticoagulants (a type of blood thinner) have experienced bleeding and/or increased blood clotting time. Patients taking these medicines should have their blood tested before starting therapy with ZOCOR and should continue to be monitored.

**Central Nervous System Toxicity; Cancer, Mutations, Impairment of Fertility:** Like most prescription drugs, ZOCOR was required to be tested on animals before it was marketed for human use. Often these tests were designed to achieve higher drug concentrations than humans achieve at recommended dosing. In some tests, the animals had damage to the nerves in the central nervous system. In studies of mice with high doses of ZOCOR, the likelihood of certain types of cancerous tumors increased. No evidence of mutations of or damage to genetic material has been seen. In 1 study with ZOCOR, there was decreased fertility in male rats.

**Pregnancy:** Pregnant women should not take ZOCOR because it may harm the fetus.

Safety in pregnancy has not been established. In studies with lipid-lowering agents similar to ZOCOR, there have been rare reports of birth defects of the skeleton and digestive system. Therefore, women of childbearing age should not take ZOCOR unless it is highly unlikely they will become pregnant. If a woman does become pregnant while taking ZOCOR, she should stop taking the drug and talk to her doctor at once. The active ingredient of ZOCOR did not cause birth defects in rats at 3 times the human dose or in rabbits at 3 times the human dose.

**Nursing Mothers:** Drugs taken by nursing mothers may be present in their breast milk. Because of the potential for serious adverse reactions in nursing infants, a woman taking ZOCOR should not breast-feed. (See WHEN ZOCOR SHOULD NOT BE USED.)

**Pediatric Use:** ZOCOR is not recommended for children or patients under 10 years of age.

**Geriatric Use:** Higher blood levels of active drug were seen in elderly patients (70–78 years of age) compared with younger patients (18–30 years of age) in 1 study. In other studies, the cholesterol-lowering effects of ZOCOR were at least as great in elderly patients as in younger patients, and there were no overall differences in safety between elderly and younger patients over the 20–80 mg/day dosage range. Of the 7 cases of myopathy/rhabdomyolysis among 10,269 patients on ZOCOR in another study, 4 were aged 65 or more (at baseline), 1 of whom was over 75.

### SIDE EFFECTS

Most patients tolerate treatment with ZOCOR well; however, like all prescription drugs, ZOCOR can cause side effects, and some of them can be serious. Side effects that do occur are usually mild and short-lived. Only your doctor can weigh the risks versus the benefits of any prescription drug. In clinical studies with ZOCOR, less than 1.5% of patients dropped out of the studies because of side effects. In 2 large, 5-year studies, patients taking ZOCOR experienced similar side effects to those patients taking placebo (sugar pills). Some of the side effects that have been reported with ZOCOR or related drugs are listed below. This list is not complete. Be sure to ask your doctor about side effects before taking ZOCOR and to discuss any side effects that occur.

**Digestive System:** Constipation, diarrhea, upset stomach, gas, heartburn, stomach pain/cramps, anorexia, loss of appetite, nausea, inflammation of the pancreas, hepatitis, jaundice, fatty changes in the liver, and, rarely, severe liver damage and failure, cirrhosis, and liver cancer.

**Muscle, Skeletal:** Muscle cramps, aches, pain, and weakness; joint pain; muscle breakdown.

**Nervous System:** Dizziness, headache, insomnia, tingling, memory loss, damage to nerves causing weakness and/or loss of sensation and/or abnormal sensations, anxiety, depression, tremor, loss of balance, psychic disturbances.

**Skin:** Rash, itching, hair loss, dryness, nodules, discoloration.

**Eye/Senses:** Blurred vision, altered taste sensation, progression of cataracts, eye muscle weakness.

**Hypersensitivity (Allergic) Reactions:** On rare occasions, a wide variety of symptoms have been reported to occur either alone or together in groups (referred to as a syndrome) that appeared to be based on allergic-type reactions, which may rarely be fatal. These have included 1 or more of the following: a severe generalized reaction that may include shortness of breath, wheezing, digestive symptoms, and low blood pressure and even shock; an allergic reaction with swelling of the face, lips, tongue, and/or throat with difficulty swallowing or breathing; symptoms mimicking lupus (a disorder in which a person's immune system may attack parts of his or her own body); severe muscle and blood vessel inflammation, sometimes including rash; bruises; various disorders of blood cells (that could result in anemia, infection, or blood clotting problems) or abnormal blood tests; inflamed or painful joints; hives; fatigue and weakness; sensitivity to sunlight; fever, chills; flushing; difficulty breathing; and severe skin disorders that vary from rash to a serious burn-like shedding of skin all over the body, including mucous membranes such as the lining of the mouth.

**Other:** Loss of sexual desire, breast enlargement, impotence.

**Laboratory Tests:** Liver function test abnormalities including elevated alkaline phosphatase and bilirubin; thyroid function abnormalities.

**NOTE: This summary provides important information about ZOCOR. If you would like more information, ask your doctor or pharmacist to let you read the prescribing information and then discuss it with them.**

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that "I have employed counsel myself—a good Henry rifle." But he eventually did settle out of court with William Lent for $150,000, his only acknowledgment, though tacit, that he had planted any diamonds. In 1873, Arnold became a banker himself by putting an unknown amount of money into an Elizabethtown bank that had temporarily closed its doors. An 1878 quarrel with another banker in town led to a shootout that injured three bystanders. Arnold took a shotgun blast in the shoulder, but was recovering when, six months later, he contracted pneumonia and, at age 49, died. Although he left his family comfortably off, several hundred thousand dollars have never been accounted for.

**Even before** the Diamond Hoax came to light, California had had more than its fair measure of frauds—from the routine salting of land with gold nuggets during the gold rush to faked reports of oil finds costing investors millions in the 1860s. "I see the Diamond Hoax as one in a long line of scams made possible by the fact that the United States truly was a land of opportunity," says Patricia O'Toole, author of *Money and Morals in America: A History*. "Many a legitimate fortune seemed to be made overnight," she adds, "so it was particularly easy for a con artist to convince a gullible American that he too could wake up a millionaire." Moreover, as Jackson Lears, a professor of history at Rutgers University and the author of *Something for Nothing: Luck in America*, observes, "The 1870s was the golden age of gambling, due to an expanding post-Civil War frontier economy." He is hardly surprised that such supposedly sophisticated investors were taken in. "In an unregulated laissez-faire economy," he says, "licit and illicit risk were difficult to distinguish; only after it had turned out well did a speculation become an 'investment.' Playing the market could be just as shady an enterprise as running a three-card monte game on a steamboat or organizing a diamond swindle."

After exposing the diamond hoax, King (shown here in 1868) was in great demand as a geological expert. But a string of business failures left him penniless by the time he died in December 1901.

TIMOTHY O'SULLIVAN / GEORGE EASTMAN HOUSE, ROCHESTER, NY

No wonder, then, that press and public alike greeted King's exposé so gratefully. The *Chronicle* editorialized that "We have escaped, thanks to GOD and CLARENCE KING, a great financial calamity." Echoed the San Francisco *Bulletin*, "Fortunately for the good name of San Francisco and the State, there was one cool-headed man of scientific education who esteemed it his duty to investigate the matter in the only right way." Many saw the unravelling of the hoax as a welcome case of government acting on behalf of the people. Clarence King, says Lears, "looked forward to the 20th century, when management rather than morality became the chief idiom and technique of control. He was the sort of man (or pretended to be) that we like to think our government regulators can be today—expertly informed, incorruptible, calmly surveying the scuffle of self-interest from an Olympian perspective, one which protects him from the irrational exuberance of the clods who think they've struck it rich."

King's role in exploding the diamond hoax made him an international celebrity—the case was followed closely in newspapers in London and New York—and he dined out on his deed for the rest of his days. Earlier in 1872, he had published a series of sketches from his time with the California survey, called *Mountaineering in the Sierra Nevada*. The book was a popular success on both sides of the Atlantic, and even today it is considered a classic of American nature writing. He counted among his friends Henry Adams, John Hay and Henry James. In one chapter of *The Education of Henry Adams,* Adams wrote of King, "None of his contemporaries had done so much, single-handed, or were likely to leave so deep a trail." Hay called him "the best and brightest man of his generation."

Upon completion of the fieldwork for his survey in 1872, King returned East where, for the next six years, he oversaw the publication of a multivolume report of the survey's findings, culminating in his own work, *Systematic Geology*, published in 1878, which one critic called "the most important single contribution made to the scientific knowledge of the continent." But even as he was finishing the book and starting a two-year stint as the first director of the United States Geological Survey, King's attention was turning from one Gilded Age secular religion, science, to the other, the pursuit of money. He tried ranching, mining and, like Philip Arnold, banking, but he didn't have the knack for any of them. He lost more money than he made, and he lost the money of many of his friends as well, though both Henry Adams and John Hay remained loyal. And when, deep in debt, King died of tuberculosis in a small brick house in Phoenix in 1901, just shy of his 60th birthday, his old friend Theodore Roosevelt sent a wire of condolence from the White House.

# Saving the Raja's Horse

## British horsewoman Francesca Kelly brings India's fiery Marwari to the United States in hopes of reviving the breed

BY JASON OVERDORF

WHEN FRANCESCA KELLY took her first trip to India—for a luxury horse safari in 1995—a friend told her, "You'll either love it or you'll hate it." A 49-year-old woman with a slightly square jaw that hints at a streak of stubbornness and impatience, Kelly is not the sort you would expect to fall in love with the haphazard life of India. But fall she did, first for an exotic and desperate Indian horse, the Marwari, and then for its sprawling desert home.

"The Marwari had this incredible, otherworldly presence which said, 'Yes, I'm here by God's will. But I don't belong to anybody,'" Kelly told me in New Delhi. "There are very few horses in the world that have that. It's [their] combination of beauty and wildness of spirit that is very alluring; especially in this present day, when it's such a rare thing."

In 1995, the year Kelly bought her first Marwari with the intention of bringing it to the United States, the horse was on a long list of threatened breeds illegal to export. Three years earlier, India had signed a global biodiversity pact and declared its indigenous livestock part of the country's "national wealth." With Indian scientists then estimating that only 500 or 600 Marwaris remained untainted by crossbreeding, the odds against getting the Indian government to reverse its position looked insurmountable.

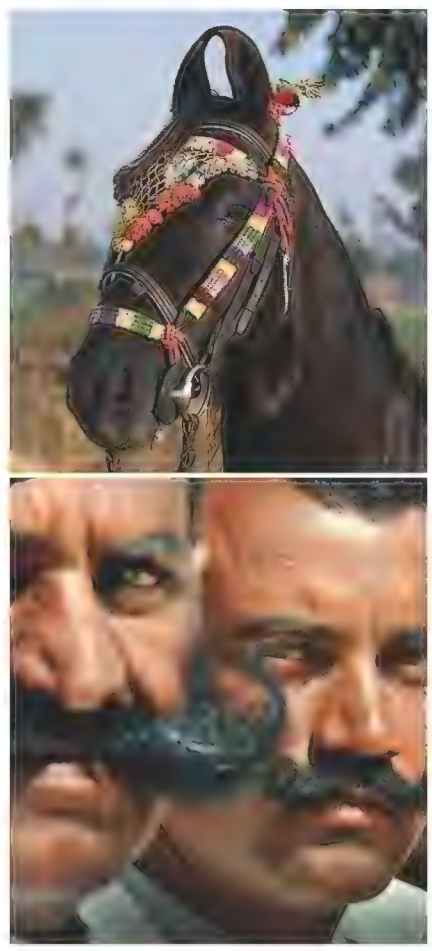
Many people would have given up. Not Kelly. Born in Washington, D.C., she grew up the stepdaughter of Sir Harold Beeley, the United Kingdom's ambassador in Cairo from 1961 to 1964 and again from 1967 to 1969, and spent much of her

Bred for battle in the desert, the Marwari horse (a bay colt, with his groom in Rajasthan) has a silky coat, long eyelashes to keep out sand, sharply curved ears and a hot temperament.

childhood there, where her fondest memories were of midnight gallops in the sands surrounding the family's desert retreat, a large Bedouin tent filled with colorful hangings and rugs. Nearly three decades later, looking into the eyes of Shanti, her untamed Marwari mare, was like looking into that past. She wasn't about to give that up. But first she would have to go toe-to-toe with some pretty tough opponents—among them, the Indian government and the U.S. Department of Agriculture. Her battle lasted five years. By the end, she'd not only won—bringing six Marwari horses home with her to Massachusetts in 2000—she'd launched a remarkable drive to preserve one of the world's oldest horse breeds.

"The view was that there were too few [Marwaris] to export them," says Raghuvendra Singh Dundlod, better known as Bonnie, a descendant of Indian nobles. It was he who led that first, influential horse safari and is now Kelly's partner in a business based on breeding and exporting the horse. "But instead of instituting some kind of rehabilitation program, basically the government had sought to freeze the situation, because it was the easiest thing to do," he adds.

The danger was that ignorance and indiscriminate breeding would lead to the demise of the Marwari as a distinct breed, an all-too-common trend. Worldwide, livestock breeds—made obsolete by tractors and tanks or replaced by "super breeds" of industrialized agriculture, such as the white turkey mass-produced on factory farms in North America and Europe—are disappearing faster even than wild species. Half the livestock breeds that existed in Europe at the beginning of the 20th century are already extinct, and almost half the remainder are at risk or endangered, according to a 1997 report by the United Nations Food and Agricultural Organization.



The Marwari's ears pointedly resemble a Rajput warrior's upturned mustache—like those worn by Rajasthani officers of the Indian Border Security Force. Right: Francesca Kelly and Raghuvendra Singh (Bonnie) Dundlod ride in Rajasthan.

Most recognized horse breeds are protected by pedigrees that trace the lineages of the "pure" animals back for generations. Registered Thoroughbreds, for instance, are linked by pedigree to one of three Arabian stallions (the Byerly Turk, the Godolphin Barb and the Darley Arabian) brought to England from the Middle East around the turn of the 18th century. Some registries use breed standards to define animals suited to produce pedigreed offspring. But in the case of the Marwari, there were no records, no studbooks and no codified breed standards. Worse, considerable interbreeding had already taken place. Without a useful, agreed-upon description of the Marwari and the introduction of a registration system, the breed would remain highly vulnerable.

TO BE SURE, the Marwari has a storied past. A hot-blooded desert horse with a thick, arched neck, long-lashed eyes and flaring nostrils, the horse was bred for battle by the Rathores, a clan of fierce warriors belonging to India's Rajput, or princely, caste of rulers. The prince who founded the ruling dynasty of Marwar ("region of death") came circa 1212 with an army of only 200 animals. But after 11 generations and many battles, the clan ruled a kingdom three times as large as Belgium, conquering most of what is now the state of Rajasthan in northwest India. Proud to a fault and honoring a glorious death above all, these martial Hindus bred into the Marwari its temperament—passionate, showy and quick-tempered, but capable also of terrific bravery. They also bred into the Marwari its most distinctive physical characteristic: ears that curve inward to a sharp point, meeting to form a near perfect arch at the tips. Aficionados compare their shape to the lyre and even to the scorpion's arched stinger. But, twisting to points so sharp they seem an affectation, the Marwari's ears resemble nothing so much as the Rajputs' own trademark handlebar mustaches, turned upright and set on their thick, bushy ends.

The Hindu Rajputs resisted India's Muslim conquerors for hundreds of years before accepting Mogul control in the 16th century. In that era of almost constant war, the Rajputs employed a legion of bards to chronicle their exploits—in songs of great horses as well as great men—tales so bloody they make the Greeks and Trojans of the *Iliad* look like Quakers.

One story glorifies the horse of Amar Singh, a Rajput who was asked by a Mogul minister to pay a penalty for missing a court meeting. "The only wealth I possess is in my scabbard," the Rajput retorted. "Come take your penalty if you will!" When the minister reprimanded him, Singh cut him off in mid-sentence—at the neck—and attacked the emperor Shah Jehan, builder of the Taj Mahal. After soldiers cornered Singh on the 70-foot-high ramparts of the Agra Fort, the Rajput spurred his fearless horse over the wall. The animal died in the fall, but Singh somehow made it to his walled mansion before soldiers caught up with him. Today, a statue of the horse stands beside the fort, a few miles from the Taj.

Another legend sings the praises of Chetak, a gray stallion that sacrificed his life for Maharana Pratap—the last Rajput to succumb to the Moguls—in the 1576 battle of

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*TOP AND P. 83 BOB LANGRISH; AMI VITALE / GETTY IMAGES; PP. 80, 81 CORBIS*

Haldighati. By rearing and drumming his hooves on the forehead of the war elephant of the imperial commander, Chetak allowed his master to kill the elephant's driver, blunting the Mogul advance. Only the arrival of reinforcements on the field rallied the Mogul troops. The story goes that even with one of his hind legs hacked off above the hoof, Chetak carried Rana Pratap away to safety. More than 400 years later, the stallion's name lives on not only in countless racers and carthorses, but in a line of Chetak motor scooters produced by India's Bajaj Auto Ltd.

In modern times, however, the Rajputs' glorification of their mounts nearly proved the Marwari's undoing. Because the rulers had long ago created a parallel caste system for horses and barred anyone but their noble kinsmen from owning or riding the prized animals, the breed became a hated symbol of feudalism and India's oppressive social divisions. In 1956, nine years after winning independence from the British, the nation's socialist government abolished feudal tenures and deprived the Rajput noblemen of their estates. Thousands of horses were shot, castrated or turned over to peasants to use as draft animals. And indigenous-horse husbandry fell, for the most part, to rural farmers.

The seeds of the Marwari's potential salvation were sown in the 1980s, when India's tourist industry began to take off. Two-thirds of Rajasthan is little more than sand dunes, but the colorful costumes and religious festivals of the state's diverse peoples have made it a top destination for visiting foreigners. Chief among the beneficiaries have been the Rajputs. Pioneers in "heritage tourism," former maharajahs, *thakurs* (lords) and *jagirdars* (vassals) rebounded from their reversal of fortunes by turning ancestral Rajput forts, palaces and walled mansions into museums or hotels. And with their renewed prosperity, some resumed interest in an ancient pastime: the breeding of horses.

For centuries the warrior Marwari (preparing to lead a procession in Jaisalmer, Rajasthan, circa 1950) were ranked at the top of India's equine caste system. By the time of independence in 1947, the breed had come to symbolize repressive feudalism.

BUT WHEN KELLY and her husband, James, came to India for the first time for their horse safari, in 1995, the effort to conserve—as opposed to just breeding—the Marwari horse had yet to start. The breeders of indigenous horses—a fractious lot, like many horse breeders everywhere—had no collective strategy for preserving the breed. Meanwhile, the only step the Indian government had taken to conserve the Marwari was banning their exportation.

The ban drew on sound logic. With the Marwari gene pool already depleted, sending stock overseas seemed foolish, even potentially disastrous. Despite a few exceptions, such as the Akhal Teke horses of Russia and the Caspian horses of Iran, most rare breeds have failed to prosper outside their original homes. Moreover, according to veterinarian Donald E. Bixby of the American Livestock Breeds Conservancy, transplanting breeds adapted to one climate and environment to a new habitat can itself alter their genetic makeup. "I've seen these plans come along fairly frequently," says Bixby, "and I've seen them fail fairly frequently."

When Kelly found out that her mare and two other Marwaris she had purchased wouldn't be coming home with her, she was devastated. But after a day or so, she set her jaw and decided that she wanted to be involved with these horses, even if that involvement might be confined to India. "The fact that the breed wasn't really being taken care of, either through ignorance or lack of money or appropriate breeding practices, pushed me into finding out as much about them as possible," she says.

Knowledge led to resolve. "I saw these horses, all pegged out like slaves, tied at the head and at the back, nose in the manger, no room to breathe," she recalls. "Nobody was going to ride them. They were the saddest specimens of cross-breeds that you will ever see." She and her partner, Dundlod, pledged to do something about it. "The future of this horse is outside as well as inside India," she decided.

To blunt the objection that shipping Kelly's handful of Marwaris to the United States would deplete the gene pool, Kelly and Dundlod started breeding top-quality horses in Rajasthan. In 1999, they joined others in founding the Indigenous Horse Society of India, the only national body of its kind, to work with the government on conservation-related programs, raise awareness about the Marwari and encourage breeders to adopt more modern methods. By 2000, the pair had won the 100-kilometer endurance race at the national equestrian games, convinced the Equestrian Federation of India to sanction the first national show for indigenous horses and produced a coffee-table book—*Marwari: Legend of the Indian Horse*—that remains the most complete study of the breed in English. Along the way, Kelly traveled to so many

HULTON ARCHIVE / GETTY IMAGES

auctions and horse festivals in remote towns across the Punjab and Rajasthan that the *Mirasi* caste of horse traders began calling her *ghorawalli*: the horsewoman.

By interesting India's equestrian community in the horse through shows, competitions and exhibitions, Kelly and Dundlod influenced the market and breeding practices. But even more significant was their effort to conjure up a studbook. Without bothering to trace the breed's foundation sire, which, if possible at all, would have involved years of poring over documents and interviewing horse traders, they began registering those prime Marwari specimens whose immediate sires and dams could be identified. When, in 1997, they finally convinced the government to lift the ban on exports, prices began to jump.

By early 2002, when I first met Kelly and Dundlod, India seemed to have almost as many Marwari breeder associations as it did Marwari horses. Already, several of the associations claimed to have plans to develop breed standards and introduce studbooks of their own. But the conservationists were trying to save an animal that they had yet to identify. Which of the existing animals represented the purest specimens? For Kelly, who hoped to interest a major U.S. breeder in promoting the Marwari in the United States, it was vital that everybody work from the same manual and, one day, set stock in the same pedigree. But the other Marwari breeders were reluctant to cede control over the registration and valuation of their own horses—especially to a group led by a foreign woman and a lesser noble who wasn't even from Marwar. One association, the Marwar Horse Society, had begun organizing the first national breed standards conference in the city of Jodhpur to make the next step in forming a coalition—and to stake its own claim to lead it. Kelly and Dundlod therefore set out for Jodhpur in October 2002.

After India's socialist government abolished feudal estates in 1956, thousands of Marwari horses were shot, castrated or given to peasants to be used as draft animals. By the time Kelly first came to India in 1995, the breed's very survival was threatened.

MICHAEL BOYS / CORBIS

THE CAPITAL OF MARWAR since 1459 and the city from which the riding pants (and short boots) adopted by the British in the 19th century take their name, Jodhpur seemed the natural center for the movement to save the Marwari horse. But shortly after the breed standards conference began, with a Hindu blessing and a series of redundant speeches by politicians, it began to unravel. One speaker after another made rambling set-piece presentations on topics of questionable relevance, whether the army's mule breeding program or shoeing practices.

Kelly, who'd turned up in trim jodhpur pants and tall riding boots, her hair wound and secured in a knot behind her head, was slowly losing her cool. Poised stiffly in her seat, she looked like a spring slowly being twisted tighter and tighter until the metal is about to snap. Every so often, she exhaled sharply and whispered a cutting aside. But, she told me, she'd resolved not to explode.

"We are getting nowhere!" Dundlod finally stood to interrupt, during the tenth description of the Marwari's ears. "Every breeder has his ideas about the breed characteristics, but without discussing them, we'll never come to a consensus."

The third day of the conference started on a sour note, as the breeders took up a proposed draft of the new breed standards. The first sentence read: "It is difficult to exactly trace the origin of the true Marwari horse with precision, but undoubtedly it has connections with the Arab and may have mixed with the Turkmenian breed and the horses of invading armies."

The first casualty was "undoubtedly." Then the link to the Arabian and Turkmenian horses came under attack. The argument developed with nationalist fervor, with Hindi-speaking breeders shouting that the Marwari could not be a Muslim horse. Eventually, after much haggling, the group settled on a statement that was by then indisputable: "It is difficult to trace the origin of the true Marwari horse."

The animal proved equally difficult to describe. An attempt that began, "The head is refined [and] relatively long, with a medium muzzle and shallow, firm mouth," was boiled down after a heated argument to, "The head is long." "But you have to say more than that," objected M. P. Yadav, director of the Indian Veterinary Research Institute, "or it doesn't mean anything!" Each adjective, whether "refined," "long," "straight," "broad," "large," "well-developed" or "well-set," and whether applied to the head, face, ears, chest, hindquarters or tail, brought the group no closer to any consensus on an ideal, theoretical horse. By the time the three-day meeting ended, it had generated a useless description that, but for something about curved ears, might have suited any horse.

Later, Kelly said grimly, "We're going to continue with creating our own breed standard." Over the next several

months, she and Dundlod and experts from the Indigenous Horse Society defined their own breed standards and subsequently translated them into Hindi. Registration with the society is now compulsory for anyone who wants to export horses or compete in the national indigenous horse show, and the National Research Centre on Equines in Hisar, India, and most other veterinary departments have accepted and agreed to disseminate Kelly and Dundlod's breed standards.

A MONTH AFTER the Jodhpur conference, I met Dundlod again at the annual horse and camel fair held in Pushkar, Rajasthan, one of the Hindu religion's most important pilgrimage sites. Each year for Kartik Poornima, a festival marking the full moon of the Hindu month of Kartik, more than 100,000 pilgrims come to the holy lake in the center of Pushkar to wash away their sins and make offerings at one of the 400 temples surrounding it. The same week, thousands of farmers and herdsmen, some of whom traveled on foot from up to 100 miles away, set up camp outside town, forming a huge outdoor livestock bazaar and the country's largest gathering of horse breeders. These men had been excluded from the decision-making process at the conference. But because they bred the largest number of Marwari horses—earning their livings by providing prize horses for Hindu marriage ceremonies—no group was more important to the preservation effort.

Increased demand and a growing awareness of the breed means that a horse trader (at the 1999 Pushkar camel fair, the world's largest) can today sell a top Marwari for $4,000—roughly the same price as India's popular Maruti 800 automobile.

Hundreds of white tents were spread out over the plain below. Camels drew carts at an easy lope over the dunes, and everywhere, I counted the bright turbans of the villagers who had brought animals to sell. The camps with the best horses were at the top of the hill near a Ferris wheel. At the bottom of the slope, the ranks of the camels began. Farther from town, and more rustic still, were the cattle and buffalo and the villagers who'd driven them here from countless miles away. Many of the horses and cattle were gaunt, their skeletons clearly visible beneath the skin. This was the third year in a row that the rains had not come to Rajasthan. Only the camels were thriving.

"There are no good horses this year," Dundlod said when I found his camp opposite the Rajasthan Tourism Development Corporation's tent village. "They're asking me to take [second-rate animals] as safari horses for whatever price, because they can't afford to keep them."

For the next three days, a diverse assemblage of breeders drifted into the Dundlod camp offering horses. They did seem eager to sell, but it was also clear they were savvy salesmen, for which Kelly and Dundlod were surely at least partly responsible.

"I used to pick up horses for my rides say for about 20,000, 30,000 rupees [$450 -$700]," Dundlod said. "There was no emphasis on the breeding really. . . . Everything has changed. Seven years back, if I had to go and buy a horse and somebody said, 'You pay a lakh of rupees' [100,000 rupees, or about $2,300], I'd have said, 'Oh my God, you're crazy!' But today I'm paying a lakh and a half, two lakhs."

Those higher prices, in large part, reflect Kelly's decision four years ago to ask $50,000 for Dilraj, her stallion in the United States—a fraction of the $150,000 routinely asked for top competition horses from established bloodlines, but a stupendous sum to India's rustic breeders. News of the price, first published on her Marwari Bloodlines Web site (www.horsemarwari.com), spread rapidly. After Kelly and Dundlod exported their first horses in 2000, the price of top Marwaris within India has jumped from around $500-$600 to $3,000-$4,000. Dunlod and Kelly argue that the higher prices, combined with the government's decision to lift the export ban, have given domestic breeders a strong incentive not only to take better care of their horses but also to document and preserve bloodlines to further increase the breed's value.

Others remain unconvinced. According to Bixby, of the American Livestock Breeds Conservancy, the export market "seldom, maybe never" encourages local breeders. For Kelly to succeed, he says, she would need a few dozen animals with several stallions, a supportive breeder network and regular exchange with the larger population to prevent her animals from becoming genetically isolated from the original breed. "I can't imagine an active interchange of genetics between the United States and India," says Bixby, concluding, "I don't think it's a very strong project from a conservation standpoint." Another skeptic is Satyendra Singh Chawra, a Rajput breeder sympathetic to Dundlod and Kelly's general aims but convinced the time is not yet ripe for exports. "We are pathetically low on quality stock,"

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he says. "In fact, you can count on your fingers the really good specimens of this breed." He continues: "One of the strongest arguments in favor of exports is that they have revived a lot of our dying handicrafts, but there's a big difference between handicrafts and horses. There may be a demand [overseas]. But we at the moment do not have adequate stocks to meet that demand."

I GOT A FIRSTHAND LOOK at just how difficult the international trade in exotic horses can be when I visited Kelly's stable on the island of Chappaquiddick, off the coast of Massachusetts and not far from the East Beach bridge made infamous by Teddy Kennedy in 1969. She and her husband, James, a multinational business consultant born in Montclair, New Jersey, visited the island many times since their marriage 14 years ago, but didn't move there from London until 2000, when James decided to cut back on his work to focus on writing a book about how men with Type A personalities make the transition into retirement. "The big reason that we're on the island is these horses," Kelly told me on my first visit in December 2002. "Because they couldn't go to England, we started building a horse farm here and it all sort of fell into place." A biting wind blew out of the northeast, and from the Kellys' barn overlooking Cape Pogue, the pewter waters of the bay looked distinctly uninviting. I had no trouble imagining the shock that Kelly's first six Marwari horses must have experienced during their first winter here in 2000, far from the Rajasthani desert.

Kelly, at her stables on Massachusetts' Chappaquiddick island (with Nazrana, her stallion, in March 2004), says, "It's ironic, but it took foreign interest to get the Indian government interested in preserving this breed."

During another visit two years later, Kelly's second shipment of horses was slated to arrive, but she was still juggling flight schedules with the availability of slots at U.S. quarantine centers. (Her horses were to fly Korean Air the long way around the world, because the European Union barred Indian horses from even touching down to refuel due to fears about the spread of contagious animal diseases.) Kelly was showing me her prize stallion Dilraj when her stable manager, Jennifer Blais, rushed out to us with a cordless phone. "Joe Santorelli!" she said. "He has space in L.A." Kelly took the receiver and, after hearing when the California quarantine center would be available, asked the importer to hold a place there until she could again talk with Korean Air. When she hung up, she said, "Apparently a lot of Americans like to import horses to give away as Christmas presents."

Logistics for her first shipment of Marwari horses, in 2000, had been even more complicated. From door to door, including veterinary fees, transport charges and quarantine space, the shipment had cost her more than $10,000 a horse, even with shipping the six animals in sets of three, the capacity of the airline's shipping pallet. Although all of her horses had been certified as healthy before leaving India, when they reached America one mare tested positive for piroplasmosis, a tick-borne infection that damages red blood cells. The mare was not allowed past customs. Once the U.S. Department of Agriculture veterinarian rejected Kelly's horse, no other country would accept it, either. For ten weeks, Kelly had fought to keep the veterinarian from euthanizing the mare, buying time by raising the specter of an international incident. Eventually, the vet steered her to Dr. Ralph Knowles, an expert on piro, who arranged for treatment in Venezuela, a reprieve that cost Marwari Bloodlines another $15,000. Today, Shyamla is doing beautifully in Chappaquiddick, pregnant with her second foal.

"If you go to India, you're going to buy your horses for three or four thousand dollars if you buy a good one," says Kelly. "And then, try to get it out. The Indigenous Horse Society [will help], but you can go around and see a hundred horses and maybe one of them will be clear of piro. That's the rub. Then you've got to ship it, and [even] if you only want to ship one horse to the United States, you'll still have to spend thirty thousand dollars."

Kelly has worked aggressively to promote the Marwari in the United States, taking out advertisements in breeder directories, cooperating with Bob Langrish, a top equine photographer, to shoot the horses for use in advertisements and breed encyclopedias, and drawing crowds at national horse fairs with exhibitions of tent pegging, a Rajera skill in which galloping riders attempt to spear a four-inch wooden block. She's even tried her hand at equine performance art in a slick theatrical production called *Ride*, in which a troupe of classically trained dancers shares the ring with one of Kelly's half-wild Marwari mares. Basing her estimate on information she's gathered from breeders of Spanish Andalusians—another rare breed that

JOSHUA PAUL

# AMERICA.

## CHAPTER I.

* * *

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When Kelly's first six Marwari horses arrived on Chappaquiddick in 2000, they were spooked by the sight of the ocean. Now they love to swim. She is still navigating the tricky logistics necessary to import a second shipment.

has become increasingly popular in America—Kelly says spreading the word about the Marwari in this country will take at least another five years.

"My goal now is to find someone who is already set up as a major breeder, who has the passion and the funds to really put the Marwari on the map in America," she told me in Chappaquiddick. "I've had multiple offers for individual horses, but I've resisted because that wouldn't serve the breed." As of spring 2004, her second shipment of horses was still waiting in India, after a strike by workers at John F. Kennedy airport in New York delayed her import plans until it was too late for one pregnant mare to travel. Setting up a viable gene pool in the United States to avoid inbreeding will require a major investment by a major breeder. Until that happens, Kelly has vowed not to scatter her horses or sell them to owners who aren't interested in breeding them. Her biggest fear about offering her stallion Dilraj for sale is that someone interested in the horse's "novelty value" might get fed up with the Marwari's spirited temper and geld him. (So far, no suitable buyer has met her price.)

Kelly goes to India about three times a year now, and in early 2004, at the National Indigenous Horse Show (in Jaipur), she saw an encouraging sight: middle-class breeders, as well as royals and tribal horse traders, coming from all over Rajasthan to participate. She plans to sell her property in Chappaquiddick, mostly because it's too isolated to be a useful headquarters. She's looking for a place in California.

The obstacles she faces in establishing the Marwari in the United States are daunting. Previous examples of successful transplantation of new breeds such as the Andalusian, were well established long before they were introduced to America. "I don't really have a master plan," Kelly told me. "If you feel strongly about something, if you have these dreams, you've just got to work toward manifesting them. And I know it will happen, because I always hold out for things that I want, and, eventually, it falls into place."

JOSHUA PAUL

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# Salem SETS SAIL

After the Revolutionary War, ships from a little Massachusetts seaport brought the new nation wares from China and the mysterious East ~ BY DOUG STEWART

THE CITY SEAL OF SALEM, MASSACHUSETTS, features neither a black-clad Puritan elder nor an American eagle but, instead, a robe-and-slippered Sumatran dignitary standing next to a row of palm trees. Below him, the city motto: *Divitis Indiae usque ad ultimum sinum* ("To the farthest port of the rich East").

It was to the "rich East," indeed, that Salem owed its brief but dazzling period of commercial glory. In the two decades following the American Revolution, Salem's sailing ships returned from China and East India (as Americans then called India, Indochina and the Malay Archipelago) brimming with tea and spices, silks and porcelain, ivory and gold dust. "Boston was the Spain, Salem the Portugal, in the race for Oriental opulence," wrote historian Samuel Eliot Morison in 1921. Salem's hugely profitable trade with the Orient transformed this hardscrabble New England seaport into a global powerhouse and, by the early 1800s, the wealthiest city per capita in the United States.

Salem's ship captains sailed around Africa's Cape of Good Hope to ports from Calcutta to Canton (c. 1800 in a Western-style Chinese watercolor likely painted for export). The Massachusetts city's seal (above) boasts "To the farthest port of the rich East."

During the height of Salem's golden age of trade with the East Indies, c. 1807, the seaport had a fleet of 200 vessels and more than 30 wharves bustling with shops and warehouses. Crowninshield, or India Wharf (above, in an 1806 painting by George Ropes Jr.), was built in 1802. The city itself (right, in an 1854 lithograph) grew and prospered as a result of the lucrative Oriental trade.

In 1799, Salem's globe-traveling sea captains and traders established the city's East India Marine Society, whose bylaws charged members to bring home "natural and artificial curiosities." The giant clamshells, poisoned arrows, silver hookahs and more than 4,000 other curios they collected formed the nucleus of what is now the Peabody Essex Museum, the oldest continuously operated museum in the country. Today the Peabody Essex owns one million works of art from around the world, along with 24 historic buildings and a library of 1.4 million books and manuscripts. In addition to maritime art, its vast holdings of Chinese, Korean, Japanese and South Asian art span five centuries. It also holds the hemisphere's oldest collections of Native American, African and Oceanic art.

A dramatic $125 million expansion by Boston-based architect Moshe Safdie, completed last June, has allowed the display of objects that had languished in storage since the 19th century. Adjacent to the new building is a spectacular, 200-year-old mansion from rural China, which was dismantled and brought to the United States in pieces in 1997. "A local provincial museum has morphed into a potential national icon," wrote Robert Campbell, the *Boston Globe*'s Pulitzer Prize-winning architectural critic, when the museum reopened a year ago. "Our central focus is on outstanding works of art," says Peabody Essex director Dan Monroe, "but we're trying to highlight their connections to the worlds in which they were made. Where did this object come from? Who made it and why? In most art museums, those connections are not often drawn out very thoroughly."

The complex's historic core is East India Marine Hall, a granite edifice built in 1824 by Salem's ship captains to hold their curiosities. The hall was also the terminus of their society's annual procession, in which the seamen paraded through town wearing ornamental robes and brandishing weapons from their travels. At a post-parade banquet inside, they offered ringing toasts—to "the strong limbs, hard faces, and free-born manners of our Sailors."

The club's first inventory, published in 1821, listed a "waist-

*A frequent contributor,* DOUG STEWART *wrote most recently for these pages about the Doris Duke museum of Islamic art in Hawaii.*

*PP. 92-95 MARK SEXTON / PEABODY ESSEX MUSEUM (2); P. 93 OFFICE OF THE CITY CLERK, CITY OF SALEM, MASSACHUSETTS; P. 95 BOTTOM: PEABODY ESSEX MUSEUM*

Boston architect Moshe Safdie's addition to the Peabody Essex Museum features a soaring atrium (left) that serves as a kind of "village green" connecting the new galleries to the old East India Marine Hall (right), built in 1824 to house Salem's East India Marine Society's collections. The hall is now home to maritime art and artifacts, including figureheads from 19th-century ships.

coat made of the intestines of the Sea Lion," a "Malay passport, written on a Palm leaf," a "Model of a Dog, made of shells, by Miss Bell, of Nantucket, when only 6 years old," and "Three thousand yards of human hair, braided." Salem native son Nathaniel Hawthorne, whose father was a member of the society, satirized it in an 1841 story ("A Virtuoso's Collection") about a museum that housed Nero's fiddle, Pandora's box and the wolf that ate Little Red Riding Hood. Still on view is a circa 1820 Falkland Islands penguin, the first of its species ever exhibited in North America; unfamiliar with the bird, the taxidermist gave it a stork's elongated neck. (In their fascination with exotica, Salem's merchant sailors were far more open-minded than their forebears, who in 1692 hanged 19 people for witchcraft and crushed a 20th to death.)

"They called the objects they collected 'curiosities,' but not in the way we use the word today," says Daniel Finamore, the museum's curator of maritime art and history. "They considered them to be physical embodiments of knowledge about the world—pieces of information." Of course, what lured these men into uncharted, often hostile waters halfway around the world in 100-foot ships wasn't intellectual curiosity but dreams of riches. "People signing on to voyages to Asia weren't just looking to make a living," says Finamore. "They were looking to make it big." With independence from Great Britain in 1783 came the freedom to trade in parts of the world that Britain had previously reserved for herself. And if a voyage was successful, the crew divvied up the profits, which could be considerable. Even a shopkeeper ashore might participate in the windfall by paying the freight charge on a box of handkerchiefs or a couple of boxes of ladies' shoes, hoping eager buyers in some foreign port would pay dearly for them. All at once, wrote a Salem minister around 1800, "the citizens of this little town were dispatched to every part of the Oriental world, and to every nook of barbarism which had a market and a shore."

When the schooner *Rajah* sailed into Salem Harbor in 1797, her hold was packed with wild Sumatran pepper—used as a meat preservative—valued at about $125,000 (more than $1.5 million today) and seven times the cost of the vessel and her contents when she'd left Salem 18 months earlier. A pep-

STEVE DUNWELL (2)

per-importing craze promptly seized the port. No wonder one Malay trader, taking in the sight of so many Salem ships riding at anchor off the Sumatran coast sometime around 1800, observed, "Salem must be a great country."

By then, Salem's port had become one of the world's busiest, with miles of wharves and the fragrance of tea, pepper and cinnamon perfuming the muddy harbor. Deckhands in turbans milled around the docks, and monkeys and parrots were offered for sale. A live elephant, the first to set foot in America, arrived in Salem in 1797, drawing a crowd of gawkers who paid 25 cents a look. A clever local sea captain, Jacob Crowninshield, had bought the beast in India for $450. He sold it in New York City for $10,000.

But it was China that was the most alluring destination for American traders trying to strike it rich. The Chinese, however, were not the easiest trading partners. "Our Empire produces all that we ourselves need," Emperor Ch'ien Lung had summarily notified England's King George III in 1793. "But since our tea, rhubarb and silk seem to be necessary to the very existence of the barbarous Western peoples, we will, imitating the clemency of Heaven, Who tolerates all sorts of fools on this globe, condescend to allow a limited amount of trading through the port of Canton."

The smart barbarian knew that New England staples like lumber and salt cod would never do. So Salem's traders practiced a seagoing form of Yankee peddling, stocking their ships with homegrown goods—nails, buttons, whale oil, rum, some barrels of beef, maybe a few crates of prunes—and swapping them for iron bars at St. Petersburg or umbrellas at Marseille. Vessels meandered around the coast of Africa or among the Pacific Islands, continually trading for items in greater demand at later ports. "Some of these ships were veritable convenience stores," says Finamore. A ship might turn over her inventory four or five times during a voyage, which could last two years.

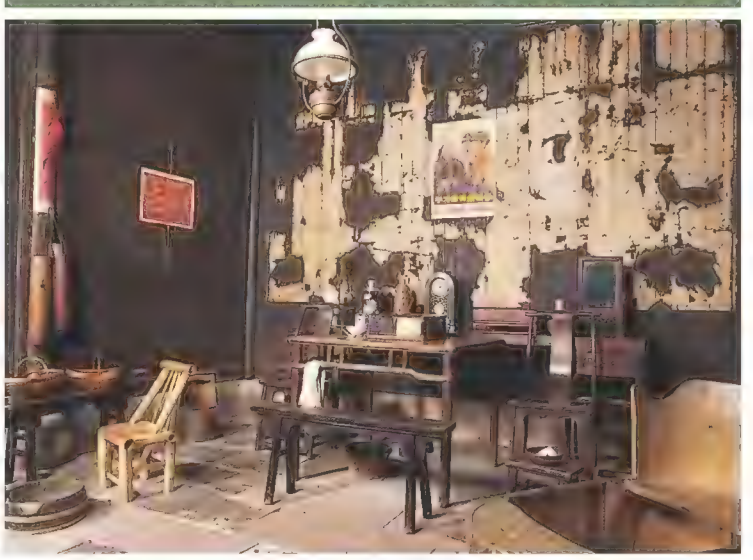
Capt. Benjamin Carpenter, whose portrait graces the Peabody Essex's East India Marine Hall, offered painstakingly detailed advice to his fellow merchant-sailors in a logbook, which is also in the museum's collection. In a script as refined as a copperplate engraving, Carpenter recommended carrying tobacco, spoons and coarse blue cloth to the Nicobar Islands in the Bay of Bengal, and there trading them for a boatload of coconuts. "This cargo of nuts will purchase at Rangoon a full load of timber," he wrote, "which will net a handsome profit on [India's] Coromandel coast." Be careful "not to assume any haughty airs during your stay [in Rangoon]," he cautioned, or you will be "severely handled."

All this parlaying of goods ideally resulted in a cargo heavily weighted in silver dollars, one commodity the Chinese were happy to accept. For their part, the Yanks who flocked to Canton were after high-value, low-bulk items—"the little elegancies of life," as Salem diarist the Rev. William Bentley called them in 1796. The most desirable of these was tea. "There are few families in our country, however humble their situation," China-trade merchant Robert Waln would write in 1820, "which would not be greatly inconvenienced by a deprivation of this exhilerating beverage." After tea came silk, which the Chinese had produced by secret methods since ancient times. (Punishment for revealing these methods was said to be death by torture.)

A third popular import was Chinese porcelain, or chinaware. For Americans 200 years ago, hand-painted china was a relatively inexpensive household luxury, not the collectible it is now. In fact, sailors used it as ballast, stacking crates of silk and tea on top. "But the teas were consumed, and the silks wore out," says William Sargent, the Peabody Essex's curator of Asian export art. "Porcelain is simply what has survived." When the *Pallas*, a Baltimore ship, arrived home from Canton in 1785, President Washington himself inquired about buying a good set of dishware, "if great bargains are to be had." And bargains there were: Americans in the early 1800s could buy an ordinary 50-piece tea service imported from China for $3 (about $40 today).

China-trade ships also carried home a hybrid form of art made expressly for the Western market: paintings, jewelry, fine silver and furniture, all of which fed the West's fantasy of China as a tranquil and opulent land. In reality, the goods were produced by industrial-style Canton workshops employing nearly a quarter of a million low-paid artisans. Landscapes and seascapes were especially popular. In the 1830s and '40s, ship portraits were in vogue. "We have a huge collection of ship paintings, because anyone who went to China had their ship por-

Brought to Salem in 3,707 pieces in 1997, the rural, 16-bedroom Yin Yu Tang house (below, in the hamlet of Huang Cun in eastern China) was built 200 years ago by a Chinese merchant. Reassembled at the Peabody Essex (bottom), it was opened to visitors last June.



CHENG SHOU@J / PEABODY ESSEX MUSEUM; STEVE DUNWELL

trait done," says Sargent. Today, their surfaces sometimes are covered with fine cracks. "It's from the paint drying too fast," he explains. "My theory is that the artists put too much drying medium in the paint because they were always in a rush to get the paintings out the door." Canton's hongs (waterfront trading houses) were another popular motif. Tankards, punch bowls and chests decorated with picturesque views of the hongs made apt souvenirs for sea captains, as the Canton waterfront was the only sliver of Chinese soil on which Westerners were allowed to tread.

A visiting American sailor might drop off a locket miniature of his wife, or perhaps an American-eagle coin. Returning a few weeks later, he could pick up a full-sized oil painting of his spouse or an eagle-themed dinner service. "The people in these parts are very Ingenious, Laborious, and Nimble," Dutch visitor Johan Nieuhof observed in 1669, "and can imitate any thing which they see made before them." An enterprising Philadelphian, Capt. John Sword, arrived in Canton in the 1790s carrying one of Gilbert Stuart's many oil portraits of George Washington. Sword returned home with more than 100 finely painted copies on glass, prompting legal action by the indignant Stuart.

The value of cargo carried by ships returning from China and the East Indies was enriching merchants in cities up and down the East Coast, but especially in Salem. The contents of three square-riggers returning from Canton to Salem in early June 1790, for example, averaged nearly $18,000 (a third of a million dollars today); and the $16.5 million in shipping duties paid at Salem's customhouse in 1807 accounted for nearly 5 percent of all federal revenue collected that year. Salem's entrepreneur in chief was Elias Hasket Derby, the merchant who in 1786 had dispatched the *Grand Turk* to China, Salem's first ship to make the trip. By the time he died in 1799, Derby was likely the new nation's first millionaire.

"The city was completely transformed," says Dean Lahikainen, the Peabody Essex's curator of American decorative art. "There were people here with so much wealth they could buy anything they wanted." While their husbands built mansions, women wrapped themselves in silk shawls, donned carnelian necklaces and sipped tea from dainty Nanking china cups. The museum's two dozen historic homes and properties include the Federalist-style Gardner-Pingree House from 1806, with carvings by Salem's master builder and shipwright, Samuel McIntire.

Salem's merchant fleet was hurt by a shipping embargo in 1807, then devastated by the British in the War of 1812. Much of the trade shifted to larger cities like Boston and New York with deeper harbors, larger ships, and rail lines radiating inland. By 1850, the founders of the city's East India Marine Society had all died, but their little museum survived and grew. In 1984, it absorbed the China Trade Museum in Milton, Massachusetts, and in 1993 it merged with Salem's historic preservation pioneer, the Essex Institute.

The most impressive artifact in the Peabody Essex Museum has only an indirect connection to Salem's China trade.

In 1799, fifty years before Commodore Perry "opened" Japan to U.S. trade, Salem captain James Devereux returned from Nagasaki with a cargo that included Japanese woodblock prints (below: *A Princess Descending From Her Palanquin*, by Kitagawa Utamaro, c. 1805). China-trade merchants prized high-value, low-bulk items such as tea and silk (above: a 19th-century Chinese bridal gown).

JEFFREY DYKES / PEABODY ESSEX MUSEUM (2)

Foreigners trading in China were required to anchor their vessels ten miles downstream on the Pearl River at Whampoa Reach (painted on a c. 1850 Chinese fan), then transport their goods to Canton by sampan and junk. "People signing on to voyages to Asia weren't just looking to make a living," says Peabody Essex curator Daniel Finamore. "They were looking to make it big."

MARK SEXTON / PEABODY ESSEX MUSEUM

The 16-bedroom Yin Yu Tang house, with ornate lattice windows, carved dragons and a courtyard with fish ponds, was built 200 years ago, roughly the time of the museum's founding, and tea leaves from the nearby hillsides of China's prosperous Huizhou region may well have steeped in Salem pots. Nancy Berliner, the museum's curator of Chinese art, happened upon the house in the tiny hamlet of Huang Cun, some 250 miles from Shanghai, on an architectural field trip in 1996. The majestic but timeworn mansion, which had been in the hands of a single merchant family for its entire existence, was uninhabited and slated for demolition.

At Berliner's urging, the museum acquired the house, furnishings and all, and shipped it to Massachusetts in 19 containers. A crew of Chinese carpenters and masons specifically brought over for the task spent a year reassembling the 3,707 pieces—from wooden pegs to decorative columns—with traditional hand tools, completing it last spring.

"The house hasn't changed much since it was built 200 years ago," Berliner says, "but we wanted to do more than show its architecture. You can see the layers of time here." A faded poster of Mao Tse-tung graces a bedroom wall, and graffiti nearby proclaims: "Down with the counter-revolutionaries!"—most likely scrawled during the 1960s Cultural Revolution to forestall accusations of capitalist decadence.

Chairman Mao, in whose name that upheaval occurred, may seem quite removed from the utterly bourgeois impetus behind the China trade, but in a museum about East-West connections, he is as apropos as a blue-and-white teapot. "This was never a museum about international trade," says director Dan Monroe. "Its founders were entrepreneurs engaged in trade, yes, but they were also among the handful of people at the time who had direct personal knowledge of the world's incredibly diverse peoples, art and cultures. They were far more familiar with Canton and Calcutta and the Pacific Islands than other Americans were with what lay west of the Mississippi." At the annual banquet of the East India Marine Society in 1804, Salem's ever-curious sea captains raised their glasses to toast their five-year-old museum, with its ceramic Buddhas and Fijian war clubs: "That every mariner may possess the history of the world."

Persuaded that guilt alone won't get Americans to pay more for environmentally friendly coffee, importers are trying a market approach by giving farmers the tools to grow better beans

*BY KATHERINE ELLISON* *PHOTOGRAPHS BY JANET JARMAN*

# CAN GREAT COFFEE SAVE THE JUNGLE?

EARLY ON AN ARID AFTERNOON, in a building high in the hills of Nicaragua's Las Segovias province, four North American men sit around a small table sipping freshly roasted coffee from spoons. Sipping is actually too gentle a word: it's more like a loud slurping, interrupted by kibitzing.

"I got a Baby Ruth vibe from that one," says Peter Giuliano, his dark eyes shining behind thick-rimmed black glasses. "There was a lot of a real caramel, nutty taste that turned me on, though on balance it was too forward." Giuliano's title is master roaster and green coffee buyer for Counter Culture Coffee, in Durham, North Carolina.

Across the table, the tall and bearded Geoff Watts, director of coffee for Chicago's Intelligentsia Coffee Roasters, shakes his head. "I thought it was leathery—in a dry, leathery way," he says.

The four coffee buyers scribble on pads of paper, rating such things as acidity, balance, appearance, aroma and aftertaste of brews from five regional farms. Hovering over them is Paul Katzeff, who organized this weeklong tasting tour of Nicaraguan farmers' coffee cooperatives. The 66-year-old CEO of Thanksgiving Coffee, in Fort Bragg, California, wears the proudly anxious air of a man at his daughter's wedding.

There's a lot on the line at this tasting at PRODECOOP, Nicaragua's largest coffee cooperative. Katzeff believes that good coffee, sweetened with social justice, has the power to change the world, offering dignity to the downtrodden and protecting the forests that provide their income. He has invested much of the past 17 years in caffeinated nation-building in these rolling northern hills. And he's certain he's seeing the fruits of his labors this very minute, as the North Americans spit their spoonfuls into nearby cans, asking questions of Eduardo Videla, a stocky, smiling farmers' representative who pours fresh cups and eagerly writes down their concerns. "If this group is happy, it will mean a lot," Videla whispers.

The fragrant sacks of beans that have produced these roasted samples have been trucked to the "cupping lab," a tiny roasting kitchen and café, by farmers who often don't drink their own coffee, let alone describe it or consider comparisons with Baby Ruth candy bars. Teaching them the mysteries of marketing is the idea behind the lab, a simple tool designed by Katzeff to improve quality control, nurture relationships between farmers and buyers, and, oh yes, save the forest. "We're bringing parts of the trade chain closer together," he says, nodding toward Videla, who is in earnest conversation with the visiting

JANET JARMAN / CORBIS

Arabica plants, which yield a richer brew, require careful attention and ample shade. As prices plunge, growers (washing beans in Nicaragua's highland jungles, left) must struggle to maintain traditional methods.

Sampling coffee like fine wine, tasters at this "cupping lab" help Nicaraguan farmers—who rarely sample their product—market their wares to gourmet buyers such as Geoff Watts, left. Feedback from such sessions can help the growers refine their techniques.

buyers. "The sound you hear is the sound of walls falling."

The goals of a better cup of joe, social justice and a healthier environment are nowhere more tightly entwined these days than in this small Central American nation, with its turbulent history of hurricanes, earthquakes, volcanoes, revolution and U.S. intervention. The coffee buyers on this trip say that Nicaragua has recently become the "hot origin" for gourmet coffee, with its beans winning taste awards and its decent wages for many small farmers a hopeful beacon for a global coffee market under siege. "Nicaragua is where you see the future of socially responsible coffee," says Katzeff.

A coffee crisis began in 1999, when new production in places like Brazil and Vietnam, among other things, caused a surplus—the international aid agency Oxfam estimates that more than five billion pounds of coffee go to waste each year—that quickly pushed prices in some parts of the world below production costs. Between 1999 and 2002, the price of coffee was halved in a race to the bottom that has trampled many of the world's 25 million small coffee farmers, throwing millions out of work and off their land and leaving families impoverished and malnourished. And as farmers have despaired, the quality of coffee has suffered.

But what does gourmet coffee have to do with rescuing the forest, or the families who tend it? It's all about shade: today's crisis stems mostly from an overflow of cheap, sun-loving, easy-to-grow robusta beans from chemically fertilized plantations in Brazil and Vietnam. The best-quality coffee, most traders agree, comes from delicate, sun-intolerant arabica plants, which tend to be grown on small farms. Here in Nicaragua, arabica is grown in rain forests more than 3,000 feet above sea level, sheltered by orange, mango, mahogany, rosewood and inga trees. The rich soil nurtures the coffee plants, while the forest canopy shelters both the berries and a host of bats and birds.

Over the past decade, U.S. and European coffee traders have worked to give the farmers here and in forests like these around the world access to better-paying "specialty coffee" niche markets. Convincing consumers to pay more for quality coffee gives farmers an incentive to farm in a way that preserves the forest—vital at a time when the planet is losing, according to United Nations estimates, some 30 million acres of tropical forest each year.

Today, coffee drinkers who care about the environment and want to help coffee workers have essentially two choic-

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*KATHERINE ELLISON is the author of* New Economy of Nature: The Quest to Make Conservation Profitable *(2002). Photographer JANET JARMAN focuses on sustainable development.*

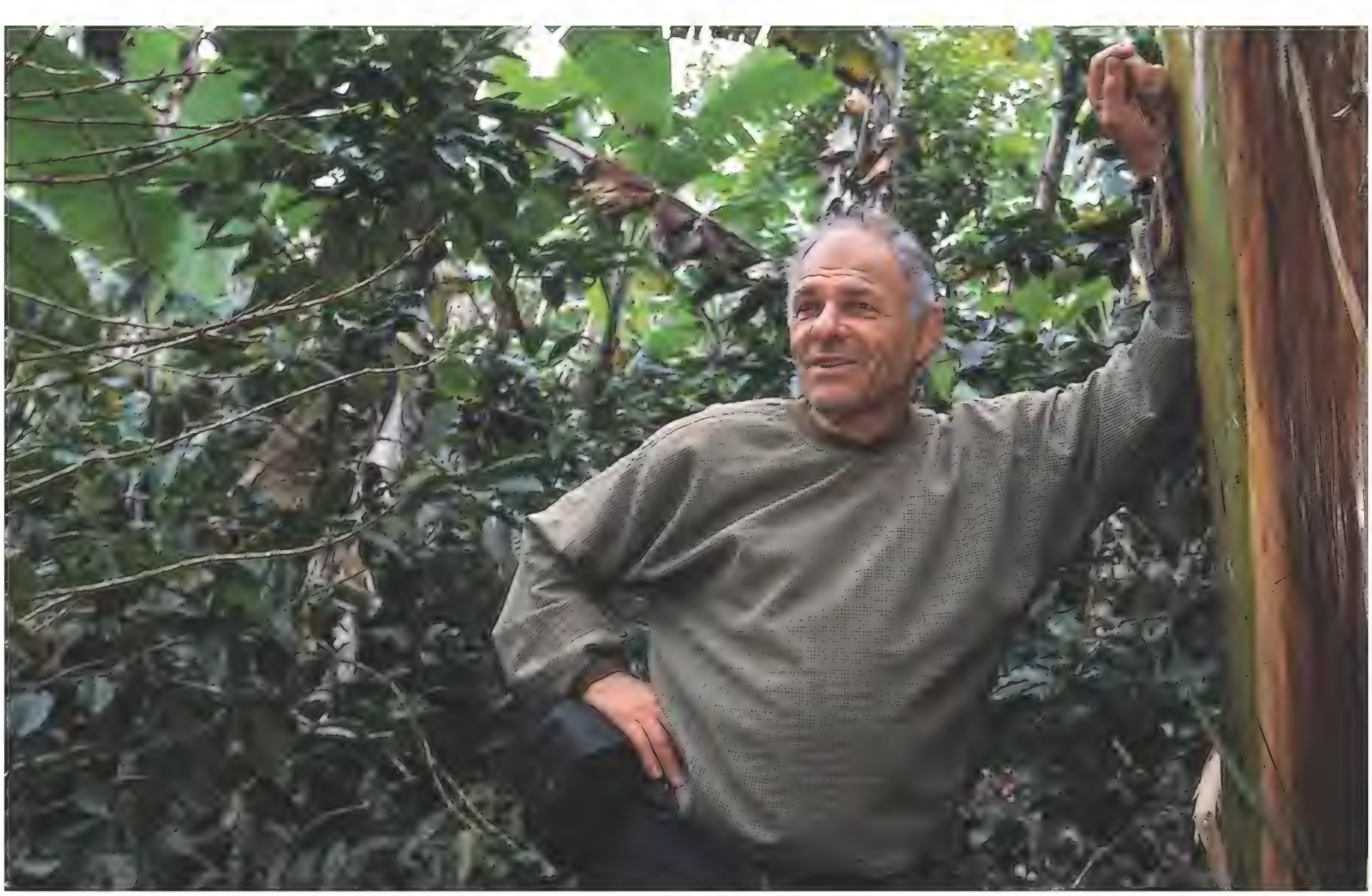
es: organic coffee, free of chemical fertilizers and pesticides, which appeals to an increasing number of individuals concerned about their health and that of the planet; and so-called Fair Trade coffee, for which importers agree to pay producers an above-market price of $1.26 a pound. (Today, the majority of Fair Trade coffee is also organic, which raises the price paid to farmers to $1.41 a pound.) The idea is catching on, slowly: Starbucks has sold Fair Trade coffee in small quantities since 2000, and says it pays at least $1.20 per pound for the rest of its beans. And late last year food giant Procter & Gamble agreed to sell Fair Trade coffee wholesale through its specialty division, Millstone.

Yet Katzeff, a Bronx-born former social worker and lifelong champion of underdogs, says neither alternative works. "Fair Trade is a totally flawed system," he says, even though his company endorses it and has sold more than 450,000 pounds of Fair Trade coffee in the past four years. "The policy is to try to enlighten people, but you can enlighten 100 percent of people and maybe get 5 percent to change their behavior." A case in point: when Berkeley, California, had a ballot initiative in 2002 proposing that local cafés sell only Fair Trade, organic and "bird-friendly" coffee (the latter a certification program to protect birds overseen by the Smithsonian Institution's Migratory Bird Center), voters overwhelmingly rejected the plan. Today, Fair Trade makes up only about .5 percent of the $18.5 billion U.S. retail coffee market. And Katzeff calls organic coffee, which accounts for 1 percent, a "miserable waste of time—people don't want to think about their health when they drink coffee."

Katzeff is convinced that the answer lies in getting consumers hooked on high-quality coffee—and that the best way to help small farmers produce better beans is by putting key tools of the trade in their hands. Until recently, for example, cupping labs could be found only among wealthy middlemen. Without the lab feedback, Katzeff writes in *The Coffee Cupper's Manifesto*, a Spanish/English manual, small-scale growers are like "a baseball player with poor eyesight and no glasses, facing a 90-mile-per-hour fastball pitcher."

Three years ago Katzeff won a $291,000 grant through the U.S. Agency for International Development to establish nine such labs in Nicaragua's northern mountains, including the one in Las Segovias. Of course, if there were ever strange bedfel-

"You can enlighten 100 percent of people and maybe get 5 percent to change their behavior," says Katzeff.



Bronx-born coffee maven Paul Katzeff, who ran gonzo journalist Hunter S. Thompson's campaign for sheriff in Aspen, Colorado, has been working in Nicaragua since 1985. "My approach is not charity," he insists. "People will pay more for quality."

By helping cooperative workers control production—from sorting beans (right) to sun-drying (above) at PRODECOOP in Estelí, Nicaragua—importers hope to raise demand and prices. The red bags of organic coffee (below) are on their way to a plant.

lows, it's the U.S. government and Katzeff, who ran gonzo journalist Hunter S. Thompson's 1970 campaign for sheriff in Aspen, Colorado. In the mid-1980s, Katzeff sued President Ronald Reagan and then-CIA chief George H.W. Bush for embargoing Nicaragua, which they did to cripple what at the time was its revolutionary Sandinista government. Even today, Katzeff sells coffee in bags adorned with a portrait of Che Guevara to protest the U.S. ban on trade with Cuba.

On his first trip to Nicaragua, as president of the newly founded Specialty Coffee Association, in 1985, Katzeff worried about how he'd be received by the Sandinista government, then under siege from a U.S.-supported "Contra" rebel war. Arriving at Managua's Sandino Airport, he recalls uniformed Sandinistas whisking him past immigration officers and introducing him to a high-level agricultural official. "Nicaragua needs you to be big," the official told him.

Katzeff says he quickly fell in love with the country—which is blessed with plentiful mountain terrain and has experienced less deforestation than more densely populated neighbors like El Salvador—and with its coffee. "It's sweet, fruity, caramely, lively in the cup: it makes you salivate," he says. "It's easily among the world's best coffees." Adding to Nicaragua's natural advantages, the Sandinista government organized farmers into cooperatives, well-disciplined support groups that have played a strong role in the pursuit of higher quality beans.

Coffee harvesting and processing are two of the most labor-intensive jobs on earth, and quality can depend on organization. A few over-fermented beans, known as *varros*, or "stinkers," from one careless farmer can spoil the hopes of several of his neighbors. PRODECOOP is one of the few companies that pay workers to hand-sort beans after they've been mechanically sorted.

This extra care is a major reason for PRODECOOP's success despite the plummeting global coffee market. The co-op has a loyal foreign clientele and has passed on $1.10 a pound to farmer members by selling more than 80 percent of its beans to Fair Trade buyers in

the United States and Europe—exceptional even for Nicaragua, where, despite all of its natural and social advantages, thousands of farmers haven't been able to earn back production costs. It's also evidence that Katzeff's profit-oriented appeal to quality-conscious buyers is bearing fruit—or beans.

ON THIS VISIT to Las Segovias province, Katzeff is sharing his contacts with colleagues, including some competitors, in hopes of building the market for Nicaraguan coffee. Not content to rely on importers, many U.S. buyers already spend several weeks a year prowling the rural hills of Asia, Africa and Latin America. "It would be an exaggeration to say the entire gourmet industry is moving in this direction," says Doug Zell, president of the Intelligentsia roasting company and a member of Katzeff's tour. "But the leaders of the industry are doing it. About 20 guys are chasing each other around on these trips, telling the co-ops, 'we'll work with you to get a better result, and when you do we'll pay you more.'"

Gourmet coffee is still a relatively young concept in the United States, where coffee drinkers paid virtually no attention to quality until the 1960s—about the time that the fictional Juan Valdez began promoting Colombian coffee in magazine ads and TV commercials on behalf of Colombia's National Federation of Coffee Growers. The poncho-wearing peasant, with his trusty burro, gently educated Americans about the hard work involved in producing fine mountain-grown beans, "the richest coffee in the world."

Then came the phenomenal rise of Starbucks and other gourmet coffee brands, which persuaded consumers to pay for richer flavors. The education of the American coffee palate had begun, though connoisseurs still say Starbucks' dark roasts obscure subtle flavors—hints of cashew, lemon, blueberries or orange—and that the chain overpromotes sweetened concoctions that completely overwhelm the flavors. "Starbucks is in the milk business," Katzeff sniffs.

The buyers on this trip are betting that discerning Americans will one day be as knowledgeable about their java as they are about wine. Even as overall U.S. coffee demand has waned

Some say Starbucks' dark roasts obscure flavors. "Starbucks is in the milk business," Katzeff sniffs.

Third-generation farmer Byron Corrales says he routinely talks to his plants. "I ask them to tell me their secrets," he says. Two years ago, Corrales won top marks from *Coffee Review*, a leading buying guide, which called his brew "extraordinary."

Fair Trade and organic coffees are increasingly available in U.S. coffeehouses (such as Mayorga in Silver Spring, Maryland) but represent just 1.5 percent of the market. Katzeff hopes that high-quality coffee grown on small farms will boost that percentage.

over the past few decades as consumption of soft drinks and bottled water has risen, sales of specialty coffees have been increasing and now make up nearly 20 percent of the world market; U.S. retail revenues, too, have risen dramatically in recent years, from $7.5 billion in 1999 to $8.96 billion in 2003.

On this trip, Katzeff invited Byron Corrales, 45, a third-generation Nicaraguan coffee farmer, to join him on an inspection of co-op coffee plants near the town of Estelí. Walking briskly along a mountain trail, Corrales points out an excess of sun here, an apparent fungus there.

"It's a craftsman's job. You've got to love it every day," Corrales says, rubbing a dark, shiny leaf in his fingers. He counts off 32 steps in farm-based coffee-processing, starting with understanding the soil, selecting the right seeds and cultivating plants in nurseries, and proceeding through laborious multiple harvests (since the fruit of coffee plants ripen at different times), fermenting, washing, and drying in the sun.

Corrales also makes different mixtures of compost—from coffee grounds, cow manure and other farm waste—for different stages of the plants' lives. "When they are producing fruit, you must treat them with more respect, just as if they were a mother," he explains. The extra care has paid off: in December 2002, Corrales won top marks from *Coffee Review*, a leading buying guide, which called his brew "extraordinary, luxurious coffee, lushly sweet" with "opulent fruit tones and delicately intense floral high notes."

When Corrales isn't tending to his plants, he's helping run CafeNica, a three-year-old national association with a membership of 6,000 small-scale farmers. In that capacity, he has joined with Katzeff to build the country's first large roasting plant. Katzeff believes the roaster will not only give farmers more control over the process but may also significantly reduce the price of Fair Trade coffee to consumers while adding quality control at the source. "With this kind of structural change, you don't have to change anybody's thinking," he says.

Well, maybe not. In a 2002 report titled "Mugged: Poverty in Your Coffee Cup," Oxfam recommends a "rescue plan," in which rich consumer nations would donate funds to help generate other sources of income. Katzeff and others dismiss the charity-dependent idea as hopelessly unrealistic.

Yet simply improving coffee quality won't save every small farmer. Many may soon have to leave the business. In the meantime, Katzeff hopes Nicaragua's model of quality control and personal relationships between farmers and buyers catches on. In February, he brought Rwandan farmers to Nicaragua to learn from the success of Corrales and others. Bit by bit, he's helping the farmers who survive produce a brew that pleases both the palate and the heart.

REGIS LEFEBURE

Illusionist Ricky Jay, a keeper of magic's secrets, conjures up a dirty deal in TV's "Deadwood"

BY NEIL A. GRAUER PHOTOGRAPH BY THEO WESTENBERGER

# THE WIZARD of ODD

♠ ♦ ♣ ♥

IN THE NEW TV WESTERN "Deadwood," Ricky Jay plays a craps dealer and con man named Eddie Sawyer, and woe to the greenhorn who bellies up to his table. Not since the World War II hero Audie Murphy played a World War II hero has a role been so cunningly cast. Jay is perhaps the world's greatest sleight-of-hand artist as well as a leading scholar of prestidigitation and illusion. The latest of his four books, published last year, is *Dice: Deception, Fate & Rotten Luck*. To write the history, Jay drew on his own collection of thousands of dice, some centuries old and many loaded, shaved or otherwise altered for cheating. That "Deadwood," set in an 1870s gold-mining camp in what is now South Dakota, would make keen use of Jay's arcane knowledge is no accident; he's also one of the scriptwriters.

Jay has a devoted following, and if his fans thrill to him in "Deadwood," which wraps up its first season this month on HBO, many also worry that the series and his movie career might cut into his stage performances, which are already as rare as a royal flush and usually the toughest ticket in town. His breakthrough show in New York City, 1994's *Ricky Jay and His 52 Assistants*—it was a solo gig directed by David Mamet, with the "assistants" being a deck of cards—sold out all performances and won an Obie before he took it to cities on five continents. Eight years later, his off-Broadway show *Ricky Jay: On the Stem*, also directed by Mamet, played before a packed house for six months. It was a paean to the old-time confidence artists along Broadway, or the "stem," in huckster parlance, and in it Jay performed truly unbelievable feats of card dealing, card throwing, mnemonics, pickpocketing and many other lost or dying tricks of the bamboozler's trade.

People "are fooled today by the same things that fooled them 500 years ago," says Jay, maybe the world's greatest conjurer.

"The idea of crime based on wit is kind of wonderful," Jay told me. "There's not much admirable in a guy who comes at you with a gun and says, 'Give me your money.' But a guy who makes you sign a piece of paper, and then you find out you've bought the Brooklyn Bridge—the con is enormously appealing. And it's theatrical. The con—the big con, especially—is an entire theatrical orchestration for an audience of one. It's both lovely and diabolical at the same time."

While other magicians rely on smoke and mirrors or leggy assistants or computerized pyrotechnics to distract, the essence of Jay's artistry is its disarming directness. In *On the Stem*, Jay routinely invited an audience member onto the stage and asked him for a credit card. Jay pulled out his own wallet and displayed its contents—cash, theater tickets, a photograph—then placed the credit card in a small yellow envelope, put the envelope in his wallet, wrapped a rubber band around it and gave it to the man, who put it in his pocket. Pause. Now check the wallet, Jay would instruct. The man took out the wallet, removed the rubber band and opened it: empty, except for the envelope. Jay then reached into his own jacket and retrieved the cash, theater tickets and photo. The man opened the envelope to find that it contained only a "Brooklyn Bridge Ownership" card. Just then, an associate of Jay's would run from the back of the theater toward the stage calling out the man's name and shouting "Telegram!" He would hand the man his credit card.

A friend of Jay's, the cinematographer Caleb Deschanel (*The Passion of the Christ*, *The Black Stallion*, *The Right Stuff*),

## JAY FIRST PERFORMED ON TV AT AGE 7. BY 1962, "TRICKY RICKY" WAS TOUTED AS AMERICA'S YOUNGEST MAGICIAN.

says Jay has perfected a kind of psychological subterfuge: "I think a lot of why we are fooled by the things Ricky does is that he's able to use our natural instincts against us, so that you look one way when you should be looking in another." Deschanel recalls the time Jay worked wonders with a piece of paper. "As he folded and tore the paper, it took on the shape of a butterfly—and then magically the butterfly flew away. It was in fact a real butterfly. It is one of the most amazing things I have ever seen. His magic is like great storytelling that brings life and reality to the level of myth. You don't feel it's a trick well done. You feel he is operating on another level that goes to the core of human instinct."

Jay's work is so astonishing that even magicians sometimes can't believe it. Responding to a magazine account of a poker trick Jay performed privately, a magician wrote that the reporter must have been mistaken: the feat could not be carried out. Jay, not one to shrink from a challenge, went on to perform the trick every night in *On the Stem*. "This is the funny thing with magicians," Jay says. "At one level, it's awfully flattering to be able to create a piece that people just thought was the result of some guy in the press

Jay (showing his lethal aim to Norris McWhirter, editor of the *Guinness Book of World Records*, in London in 1976) set a record that year when he threw a card faster and farther than anyone. (Note the card flying over McWhirter's right shoulder.)

DAVE EDWARDS FOR BBC

being hoodwinked. But it's also why I don't spend a lot of time with magicians." *Professional* magicians, anyway; among Jay's friends are many amateur magicians.

Jay, who appears to be in his late 50s or early 60s, recently married his longtime partner, Chrisann Verges, a movie and TV producer. They share a Los Angeles-area house and also a New York apartment. He writes, including the *Encyclopaedia Britannica*'s entry on magic. He delves so deeply into the history of bizarre entertainments, like singing mice and mind-reading pigs, that the *New York Times* once referred to Jay and Mamet, his frequent collaborator, as the "wizards of odd." He does a weekly public radio show, "Jay's Journal," and his consulting firm, Deceptive Practices, advises moviemakers on ploys and special effects, such as Gary Sinise's "amputated" legs in *Forrest Gump*. He has acted in 16 movies in as many years. He insists he can continue to do it all. Still, he did hint to me that performing *On the Stem*, not to mention practicing for it hours each day, was exhausting. "It's a hard show to do," he said at the time. "It's live theater. There is no television editing here. Every night. Most people don't have the luxury of coming back. They've got one shot at seeing me do a show. They're coming because they've heard I do a good show. I've got to give them a good show. Night after night. There's never a night to relax, never a night to let up. Never. Never."

Such talk makes some Jay watchers anxious that the man they say is the greatest conjurer of the last century may be slowing down. In fact, admirers have for years been paying him the ominous tribute of casting his performances as historic. "Some people can tell their grandchildren that they saw Muhammad Ali box," political pundit Charles Krauthammer wrote in a 1998 column that urged readers to catch Jay's act. "You'll be able to tell yours that you saw Ricky Jay deal."

JAY'S EARLY YEARS ARE famously sketchy, and one can only speculate whether it's more natural for an illusionist to be disinclined to discuss the mundanities of childhood or for a child with a difficult home life to become an illusionist. He was born in Brooklyn, but won't say when, though some sources put it at 1948. He grew up in Elizabeth, New Jersey, but won't identify his parents and declines to divulge his surname. "Ricky" and "Jay" are his given first and middle names. He first left home at age 15 and broke with his parents a few years later.

Jay says his greatest influence was his maternal grandfather, Max Katz, a native of Austria, who was an amateur magician and such a serious student of chess, billiards and other games that he coaxed the finest players to teach him their moves. "He was a guy who took his passions seriously," Jay recalls. "And so he had an influence on me far beyond just magic." When Jay was 4 years old, Katz introduced him to Dai Vernon, a Canadian-born master magician and sleight-of-hand artist (who would become Jay's mentor). The setting was a family barbecue, and little Jay performed for the great conjurer—multiplying packets of coffee creamer.

Jay first performed magic on television at age 7. By 1962,

*NEIL A. GRAUER, a Baltimore-based writer and caricaturist, is the author of* Remember Laughter: A Life of James Thurber. *Photographer THEO WESTENBERGER is based in New York.*

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an adolescent "Tricky Ricky" was being touted in one magic industry magazine as America's youngest magician.

After leaving home, Jay attended four or five colleges, but never graduated. A Cornell University classmate was quoted in a 1993 article on Jay in the *New Yorker* as saying that Jay "sat in his room and practiced card tricks" about ten hours a day. Back then, Jay also worked as a bartender, sang in a doo-wop group called the Deaf Tones, sold encyclopedias, did accounting work on Wall Street and performed magic at resorts in the Catskill Mountains. He performed twice on the "Tonight Show" as a guest of Johnny Carson, himself an accomplished magician. On the road, Jay served as an opening act for the likes of the Nitty Gritty Dirt Band.

In Jay's sort of magic, there are no shortcuts. "To succeed as a conjurer," said one of his heroes, Jean-Eugène Robert-Houdin, the 19th-century French master of illusion from whom Harry Houdini took his stage name, "three things are essential: first, dexterity; second, dexterity; and third, dexterity." Jay is best known for his uncanny way with playing cards. According to the *Guinness Book of World Records,* Jay has thrown a card farther, higher and faster than anyone. He captured the records one day in 1976; one card he threw traveled 135 feet; another sailed into a window several stories up; another flew 90 miles an hour. He throws a card with such deadly precision it can pierce a watermelon at 20 paces. In one motion he can spray an entire deck of cards at an open wine bottle, and all the cards splatter around it except a designated one, which, somehow, curls and slips into the bottle. His first book, 1977's *Cards as Weapons*, is a collector's item.

Jay (as craps dealer and con artist Eddie Sawyer in TV's "Deadwood") has used his hard-won stage skills to help put magic in movies, acting in 16 films and owning a consulting firm, Deceptive Practices, that conceives of cinematic special effects.

It is unwise to play poker with this man, as he demonstrated in *On the Stem* when he invited an audience member to join him for a few hands. Jay shuffled, dealt—and won. "Was that fair?" he said. "I . . . don't . . . think . . . so." He let the man cut the cards. Jay won. He let the man shuffle *and* cut. Jay dealt and won. "Was that fair? I . . . don't . . . think . . . so." Finally, the man shuffled and cut the cards while Jay sat with his hands flat on the table and said, "You pick a hand for me and a hand for yourself." The man did so, then turned over the four cards he selected for himself—all losers. "Was that fair?" Jay asked, and one by one turned over the cards he had been dealt. "I"—ace—"don't"—ace—"think"—ace —"so"—ace.

The only person I ever knew who saw both Houdini and Jay perform was the caricaturist Al Hirschfeld, who died last year at age 99. Hirschfeld marveled at a stunt of Jay's in which, sitting with his back to a giant chessboard, he called out moves to make a knight land on each square while he also recited Shakespeare, chanted snatches of field-holler songs and calculated the cube root of six-figure numbers selected by audience members from a stack of index cards. Hirschfeld also recalled Houdini's physical prowess, which enabled him to, say, swell his wrists while being handcuffed, the better to slip out later. Hirschfeld, whose particular gift was capturing a personality with a stroke, offered this assessment: "Ricky is mental and Houdini was muscular."

Jay suggests that Houdini, best known as an escape artist, isn't in his league when it comes to illusions. "He was never a good magician," Jay says. "He was one of the most amazing exponents of bombast in the world, a shameless self-promoter. He did some real inquiry into the history of magic and unusual entertainers, which I find very appealing. But he treated other magicians very badly. He is not my hero." Closer to Jay's interests was Max Malini, who lived from 1873 to 1942 and performed for luminaries worldwide, including presidents Theodore Roosevelt and Warren Harding. Malini, Jay writes in *Learned Pigs & Fireproof Women*, could "stand a few inches from you with a borrowed coin, a lemon, a knife, a tumbler or a pack of cards and convince you he performs miracles."

The history of his secretive vocation remains something of an obsession for Jay, who says magic is the second oldest of all the arts, after music. His scholarly pursuits were dealt a blow a decade ago. For five years he had served as the curator of the Mulholland Library of Conjuring and Allied Arts in Los Angeles, doubling the collection and nearly quadrupling its value. In 1990, the library was auctioned off and sold for $2,200,000 to David Copperfield, who moved it to Las Vegas. Copperfield has reportedly invited Jay to see the collection, but Jay has declined and prefers not to discuss it.

Still, at Jay's house near Los Angeles he has his own library of some 5,000 books and tens of thousands of lithographs, engravings, playbills and entertainment ephemera. "I'm very comfortable in my home, with my wife, my dog and my collection," Jay says. "It's where I read and write."

Not so comfortable, fans might hope, that he gives up the grueling work of making magic.

DOUG HYUN / HBO

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**Brian, 45 years old**
**Business Professor**
**Divorced but attached**

**Loves:**
**A passionate debate**

**Wants to try:**
**Authentic French cuisine**

**Personal passion:**
**Military history**

HIS EXPEDIA ADVENTURE

Strolled under the Arc de Triomphe after grazing through the menu at the acclaimed Guy Savoy restaurant.

Marked the sixth anniversary of D-Day with a tour of the landing beaches of Normandy.

Paid respects at the Pegasus Memorial, where the 6th Airborne seized the bridges over the Orne, including the famous Pegasus Bridge.

Had lunch at an historic 13th-century farm.

Used the Paris Museum and Monument pass to experience a different museum every day of the trip. It offers access to over 70 museums and monuments in and around Paris. Favorites: Musee National Picasso and Musee Auguste Rodin. Saw Mona Lisa smile.

HIS EXPEDIA ADVENTURE

Had a ball at the New Orleans School of Cooking. The Creole/Cajun classes were full of entertaining tall tales along with local recipes for gumbo and jambalaya.

Walked off the crawfish beignets and bread pudding while admiring the Greek Revival and Italian architecture on the Garden District Walking Tour.

Is New Orleans the most haunted city in the U.S.? The tour to find the answer — the Ghosts and Spirits Tour, led by paranormal investigators. Got spookiest at O'Flaherty's Pub — it's reportedly frequented by three bitter ghosts.

Visited Ripley's Believe It or Not — a truly offbeat way to spend an afternoon.

**NEW ORLEANS**

**Michael, 52 years old**
**Newspaper Editor**
**Married, three grown children**

**Loves:**
**Jazz, especially the sound of the saxophone**

**Wants to try:**
**A second career**

**Personal passion: Cooking**

**PUERTO RICO**

**Annemarie, 36 years old**
**Owner, cooking school**
**Married, two children**

**Loves:**
**Mango margaritas**

**Wants to try:**
**Bird-watching**

**Personal passion:**
**Hiking anywhere there is a wide-open blue sky**

HER EXPEDIA ADVENTURE

Explored Camuy Caverns and the third-longest underground river in the world. Loved seeing the bamboo and banana trees at the cave entrance.

Had an amazing guided bird-watching hike in El Yunque rainforest. Actually spotted a Lizard Cuckoo — its call is like something out of a Tarzan movie.

Took the kids to Fort San Felipe del Morro (while John visited the forte's casino). Its labyrinth of dungeons, barracks, tunnels and turrets are perfect for learning about the area's history under Spanish rule.

Everyone dozed on the beach after a day of surfing lessons at Pine Grove in Isla Verde.

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# Journey to the

## Though only one of the ancient marvels still stands, they still engage our imagination—and launch a thousand tours—more than two millennia later

*BY TONY PERROTTET*

VISITORS TO THE LOBBY of the Empire State Building in Midtown Manhattan are often surprised to find a series of pictorial stained-glass panels. Added in the 1960s, they were meant to link the great skyscraper to other engineering triumphs. These triumphs, however, are not the great symbols of American modernity you might expect—other massive steel-and-concrete structures like the Hoover Dam or the Panama Canal—but the Seven Wonders of the Ancient World.

The colorful lobby paintings make no attempt at accuracy. Rather, they echo fantasies of the ancient monuments that have been current since the Renaissance—but they are mysteriously inspiring all the same: the Pyramids of Giza, the Pharos of Alexandria, the Temple of Artemis in Ephesus, the Mausoleum at Halicarnassus, the Colossus of Rhodes, the Hanging Gardens of Babylon, the Statue of Zeus at Olympia.

Why should a collection of monuments more than two millennia old still capture the imagination—especially when six of the seven are no longer standing?

Built between 2580 and 2510 B.C., the Pyramids of Giza (where the 7,200-mile Tour d'Afrique-Cairo to Cape Town bike race, above, starts) are the only Wonder still standing (right, in 1890).

# Seven Wonders

"It's that word 'wonder,'" says David Gilman Romano, professor of classics at the University of Pennsylvania. "If you just called them the Seven Architectural Marvels, it wouldn't have the same impact." Then, too, the one that does survive—the Pyramids of Giza—is sufficiently stunning to convince us that the ancients weren't exaggerating the splendor of the other six.

It's also our passion for ordering the world. "We are living in a time very much like that of the Hellenic period," says Larissa Bonfante, professor of classics at New York University. "The Greeks loved to have things categorized—they loved anything out of the ordinary—and so do we." In our chaotic age, bombarded as we are with new technologies and rapid cultural change, we still seem to yearn for the security of mutually acknowledged "greats"—whether it be Impressionist painters, *Citizen Kane*, the Washington Monument, Cartier-Bresson photographs or the Hanging Gardens of Babylon.

ONE OF THE FIRST-KNOWN lists of wonders was drawn up in the third century B.C., when a Greek scholar at the Library of Alexandria, Callimachus of Cyrene (305-240 B.C.), wrote a treatise called "A collection of wonders in lands throughout the world." The essay has been lost, but his choices may have become the basis for later selections, such as the famous list attributed to the engineer Philo of Byzantium around 250 B.C. Of course, the whole idea of Seven Wonders started with antiquity's fondness for the number seven: being indivisible, it gave each of its elements equal status and so enjoyed a privileged position in numerology.

The list also reflected a shift in Western attitudes toward the world, as thinkers began to celebrate man-made creations along with those of the gods. In the wake of Alexander the Great's conquests of the Persian Empire and parts of India (334-325 B.C.), Greeks marveled at their own achievements. "Like the sun," raves Philo of the Hanging Gardens, "beauty dazzling in its brilliance."

From their inception, the ancient Wonders were also rooted in human curiosity. In fact, the sites, originally, were not called "Wonders" at all, but *theamata,* "things to be seen," preferably in person. In the Hellenic era, wealthy and erudite Greeks traveled by land and sea around the cultural centers of the eastern Mediterranean, broadening their education firsthand. Although the lands conquered by Alexander the Great had dissolved into separate kingdoms by the time Philo compiled his list, they were still ruled by Greek-speaking dynasties, and while travel was not yet as safe as it would become under the Roman Empire, the network of Greek culture extended far and wide, offering an open invitation to explore.

Today one can follow the itinerary of an ancient traveler as he—a peripatetic Greek scholar of that time was almost always male—sought out the magnificent Seven. Along the

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*Travel writer* TONY PERROTTET *is the author of* Pagan Holiday: On the Trail of Ancient Roman Tourists *(Random House, 2002).*

*MAP: MIKE REAGAN; P. 114 AMR NABIL / AP / WIDE WORLD PHOTOS; PP. 114, 115 MARY EVANS PICTURE LIBRARY*

route, he would find passable highway inns and cheap roadside restaurants. At the sites themselves, professional tour guides called *exegetai*, or "explainers," jostled for commissions ("Zeus protect me from your guides at Olympia!" prayed one first-century B.C. antiquarian worn down by their harangues). There were papyrus guidebooks to consult before departing and vendors with whom to haggle over souvenirs: a cheap glass vial engraved with an image of the Pharos of Alexandria has been found by archaeologists as far away as Afghanistan.

### *THE STATUE OF ZEUS AT OLYMPIA*

DEPARTING IN THE SHADOW of the Acropolis from Athens, the traditional center of ancient learning, a scholar-tourist of 250 B.C. would likely have set off on his grand tour with a couple of servants and a pair of pack mules to carry the luggage. The first and easiest Wonder to visit was the great sculptor Phidias' (c. 485-425 B.C.) Statue of Zeus (completed around 435 B.C.) at Olympia, a religious sanctuary in southern Greece and the site of the Olympic Games. An energetic walker could cover the 210 miles in ten days. Arriving at Olympia, visitors beheld a walled enclave where a trio of Doric temples, 70 altars and hundreds of statues of past Olympic victors created a dazzling sculpture garden. The most impressive of the structures was the Temple of Zeus, built between 466 and 456 B.C. and resembling the Parthenon in Athens. Through its grand bronze doors, a constant stream of travelers passed into the flickering torchlight, there to behold a glowering, 40-foot-high, gold-and-ivory figure of the King of the Gods seated on a throne, his features framed by a leonine mane of hair.

"It seems that if Zeus were to stand up," wrote the Greek geographer Strabo, who visited the statue early in the first century B.C., "he would unroof the temple." Beyond its stunning size, viewers were struck by the majesty of the image's expression—even stray dogs were said to be cowed. The sculptor had captured both Zeus' invincible divinity and his humanity. Roman general Aemilius Paullus (c. 229-160 B.C.), an earlier visitor, "was moved to his soul, as if he had beheld the god in person," while the Greek orator Dio Chrysostom wrote that a single glimpse of the statue would make a man forget his earthly troubles.

### *THE COLOSSUS OF RHODES*

FROM OLYMPIA, our intrepid traveler would have caught a merchant ship from the isthmus of Corinth, sailing eastward some 300 miles across the pellucid waters of the Aegean. Since there was no exclusive passenger service, one simply negotiated a price with the ship's captain and took a place on deck. One's servants would arrange the creature comforts,

HISTORICAL PICTURE ARCHIVE / CORBIS; FERDINANDO SCIANNA / MAGNUM PHOTOS

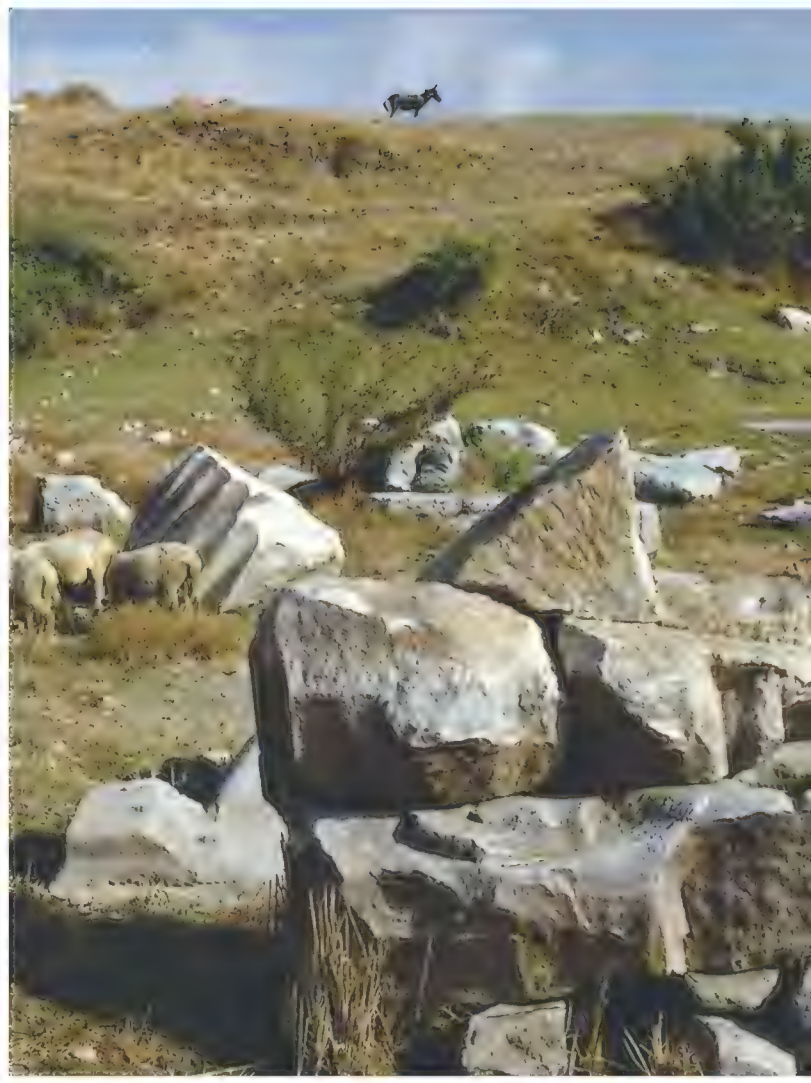
In ancient times Olympia, the site of the Statue of Zeus (below, in a 1721 engraving by Fischer von Erlach), drew devotees from far and wide the way Mecca attracts Muslims today. Crumbling columns are all that's left of the statue and the temple that housed it.

Historical depictions of the Colossus (below, in an 18th-century engraving) usually show the statue straddling Rhodes' harbor (above, today). But engineers believe that was not technically feasible in the third century B.C.

leaving the traveler to enjoy the view and make small talk with fellow passengers.

Arriving a few days later at their destination, the bustling island of Rhodes, the travelers would have been greeted with a breathtaking sight. There, towering majestically above the island's port, so crowded with ships' masts that it was said to resemble a field of wheat, stood a 110-foot-high Colossus—a gleaming bronze statue of the Greek sun god Helios. It was long believed that the statue straddled the harbor entrance, but modern archaeologists say this would not have been possible with the bronze-casting techniques available to the sculptor, Chares of Lindos, when he erected it between 294 and 282 B.C.

While not even a drawing of the statue survives, scholars theorize the Colossus was an upright figure holding a torch aloft in one hand not unlike the Statue of Liberty; Helios' face was quite possibly modeled after Alexander the Great's. Yet, for all its majesty, the Colossus turned out to be the most fragile Wonder of them all—standing for only 56 years before collapsing in an earthquake in 226 B.C. "Even lying on the ground, it is a marvel," wrote Roman scholar Pliny the Elder in the first century A.D. "Few people can even put their arms around the figure's thumb, and each of its fingers is larger than most statues."



A vast marble structure with 127 columns, the Temple of Artemis in Ephesus (left, as imagined in a c. 1660-70 oil) was built in the seventh century B.C. in honor of the goddess of the moon and of hunting. All that remains of the site today are ruins (right).

GIRAUDON / BRIDGEMAN ART LIBRARY; BRIDGEMAN ART LIBRARY; P. 118 FERDINANDO SCIANNA / MAGNUM PHOTOS; GRANGER COLLECTION

## THE TEMPLE OF ARTEMIS IN EPHESUS

THE COLOSSUS WOULD HAVE MADE an appropriate introduction to the opulence of Asia Minor (modern Turkey), where the Temple of Artemis mixed Oriental splendor and Hellenic artistry. Size mattered in the ancient world, and in the ostentatious port of Ephesus, citizens built their greatest temple to tower above the city skyline. Though the Parthenon of Athens was regarded as the most perfectly proportioned of all buildings, the Temple of Artemis overwhelmed it in scale. Estimates suggest the interior was about 425 feet long and 255 feet wide, making it nearly as cavernous as New York City's Grand Central Terminal. One hundred twenty-seven columns, painted in gaudy colors, supported its huge ceiling; some visitors felt lost in the dizzying forest of pillars, as imposing as sequoia trunks. Guides warned tourists not to stare at the temple's polished white-marble walls lest they be struck blind by their brilliance. Swathed in clouds of incense, a statue of the mother goddess beckoned with open arms. This was not the svelte, athletic huntress Artemis of Greek lore but a majestic, maternal creation from the East, whose multiple breasts hung like papayas from her torso. Among eunuch priests offering sacrifice at the statue's feet, silversmiths peddled souvenir miniatures of the temple and goddess for the pagan faithful. "Only in Heaven has the Sun ever looked upon its equal," gushed Greek author Antipater around 100 B.C.

## THE MAUSOLEUM AT HALICARNASSUS

NO LESS SPLENDOR graced the Mausoleum, rising 140 feet into the air like a gigantic wedding cake above the turquoise harbor of Halicarnassus, now the modern port of Bodrum on the so-called Turkish Riviera, about 60 miles from the Colossus. Built, legend has it, around 350 B.C. for King Mausolos, the ruler of Caria, by his grief-stricken sister-wife, Artemisia, the Mausoleum was an art lover's fantasy whose tiers teemed with more than a hundred statues of heroes, kings and Amazon warriors, carved by the five greatest Greek sculptors of the day. "Even today," noted Pliny the Elder in 75 A.D., "the hands of the sculptors seem to vie with one another in artistry." The glittering confection was topped with a statue believed to be of the dead king and his wife riding a golden chariot.

## THE LIGHTHOUSE OF ALEXANDRIA

SAILING SOUTH TO EGYPT, a journey of several days, travelers up to 50 miles out to sea could spot the fifth—and the only practical—ancient Wonder: the Pharos, or lighthouse, of Alexandria, whose orange flame guided ship pilots along the Nile Delta's treacherous coastline. Looming above Alexandria's busy Eastern Harbor and surrounded by palm trees and statues of the Pharaohs, the 445-foot, three-tiered limestone tower was taller than the Statue of Liberty. At its pinnacle, a giant burning brazier topped by a

statue of Zeus provided a suitably theatrical arrival to the city where Europe, Africa and Asia met. Once ashore, visitors hastened to Alexandria's Great Library to observe the scientists, astronomers and geographers who labored in what amounted to the first government-funded think tank, the Mouseion. It was these learned men who had produced the lighthouse.

### *THE PYRAMIDS OF GIZA*

EVENTUALLY, our Seven Wonders tourist would likely have torn himself away from Alexandria's pleasures to sail up the Nile and gaze upon the oldest and most impressive wonder of them all—the Pyramids of Giza, three pyramids that rise, even to this day, from the undulating sands of the Giza Plateau. (For thousands of years, the Great Pyramid of Giza was the tallest and most precise stone building in the world.) The pyramids were especially dazzling in the Greek era when they were still sheathed in white limestone and covered by hieroglyphics and graffiti, glistening brilliantly in the desert sun. Surrounding the pyramids, the remains of ancient temples dating back to the Old Kingdom—the apogee of Egyptian military power and artistic skill circa 2500 B.C.—dotted the landscape. Shaven-headed priests, acting as tour guides, pretended to translate the pyramids' hieroglyphics, which they said described the construction of the monuments, including even what the Egyptian workmen who built them, between around 2580 and 2510 B.C., ate on the job.

### *THE HANGING GARDENS OF BABYLON*

THE FINAL SITE on our traveler's itinerary would have been the most difficult to visit. He would have had to sail to Antioch, in Syria, then follow 500 miles of desert tracks, either on horseback or by carriage, to gaze upon the gardens' splendor. Babylon, lying some 45 miles south of modern Baghdad, was once widely regarded as the most intoxicating urban center in the world. Travelers entered the city through the Ishtar Gates, inlaid with blue glazed bricks bearing images of lions, bulls and dragons, only to behold a forest of towering ziggurats, obelisks and smoking altars by the Euphrates River.

The Hanging Gardens—a rooftop paradise of sculpted terraces, shade, and perfumed flowers—rose majestically above the human sprawl, watered by a hydraulic irrigation system. ("A work of art of royal luxury . . . suspended above the heads of spectators," noted Greek engineer Philo around 250 B.C.) The gardens had been built by King Nebuchadnezzar II (604-562 B.C.) for his wife, a princess from Media, a fertile kingdom by the southern Caspian Sea, who was homesick for greenery; it was said Alexander the Great gazed

The enormous Mausoleum at Halicarnassus (below, in a 17th-century painting by Wilhelm van Ehrenberg) was built c. 350 B.C. for King Mausolos of Caria by his sister-wife, Artemisia. Only fragments, such as this stone head—probably of Mausolus—survive.

GIRAUDON / BRIDGEMAN ART LIBRARY; BRITISH MUSEUM / BRIDGEMAN ART LIBRARY

After the Pharos of Alexandria (left, in an 1886 lithograph) was destroyed by a 14th-century earthquake, a fortress was erected on its site (right). Statues from the Pharos site (a sphinx, below, and King Ptolemy, bottom) were discovered on the ocean floor in 1994.

upon them from his deathbed in the royal palace in 323 B.C.

But much about the gardens is unknown, including their exact location. "The Hanging Gardens, by their very nature, cannot be definitively found," says Richard A. Billows, professor of history at Columbia University. "They would not leave a very clear footprint that says 'this must have been the spot.' This isn't helped by the fact that there is no clear idea of what the gardens looked like."

THOUGH ONLY ONE of the Seven Wonders survives, it and the sites of the six others still launch a thousand package tours each year. Fascination with the Pyramids of Giza is certainly understandable; even stripped of their gleaming limestone—Arab conquerors used it as building material in the Middle Ages—the pyramids' majesty, antiquity and bulk continue to astonish visitors, even if their first glimpse is from a crowded Cairo suburban highway.

But our fascination with the "missing" Wonders is harder to explain. Two of them exist only as fragments on display in museums; others have been scorched entirely from the earth. And yet, they remain curiously compelling. Phidias' Statue of Zeus at Olympia was taken to Constantinople in the fourth century A.D. and was later destroyed in a palace fire, but the sanctuary itself—near the first Olympic Stadium through overgrown ruins buzzing with bees—remains one of the most visited attractions in Greece. All that is left of the Temple of Zeus is its foundation, but the spot where the statue stood has been identified. In 1958, archaeologists found, some 50 yards from the temple ruins, the workshop in which the artist Phidias sculpted the statue in the fifth century B.C.—including pieces of ivory and the base of a bronze drinking cup engraved with the words "I belong to Phidias" in classical Greek.

In Rhodes, hordes of tourists cluster each summer at Mandraki Harbor, where the Colossus is thought to have stood. Around A.D. 650, more than eight centuries after its collapse, it was broken up by Arab plunderers and sold as scrap metal. Today, not a toenail remains, though local en-

ARCHIVES CHARMET / BRIDGEMAN ART LIBRARY; STEPHANE COMPOINTE (3)

trepreneurs peddle souvenir T-shirts, spoons and cups emblazoned with the statue's image. (In 1999, the citizens of Rhodes announced a memorial to be built on the site, though work has yet to begin.)

As for the two Wonders of Asia Minor—the Temple of Artemis and the Mausoleum—they were devastated by earthquakes, barbarians and vengeful Christians. Scraps of both lie in the British Museum in London, but their sites are hauntingly bare. In an ironic genuflection to the cycles of history, chunks of the Mausoleum's original masonry were used to refortify the Castle of St. Peter at Bodrum, which was restored in the 1970s as a museum dedicated to underwater archaeology.

And, as the city of Alexandria reminds us, there is always hope for finding "lost" Wonders. In 1994, Asra el Bakri, an Egyptian filmmaker creating a documentary about Alexandria's Eastern Harbor, noticed some huge stone blocks just below the water's surface off Fort Qait-Bey, on a promontory at the heart of the old city. Within a year, French marine archaeologists had catalogued just under 3,000 chunks of masonry, some of which is thought to be the lighthouse, scattered about the ocean floor. Soon they were raising the magnificent statues that

Napoleon rallied his troops in the shadow of the Pyramids of Giza (above, the Pyramid of Khafre and the Sphinx, 1905) while fighting the Mamelukes in 1798. "Soldiers!" he exclaimed. "From the height of these pyramids, forty centuries are watching us."

once stood by its side. The sculptures are believed to have fallen there during earthquakes that struck the region from late antiquity to the 14th century A.D.

"As a news story, it was definitely very sexy," says Colin Clement, spokesman for the Centre d'Etudes Alexandrines (CEA), the French organization leading the work. "It seemed like everyone wanted to film or photograph what we were doing." More recently, marine archaeologists discovered the frame of a nearly 40-foot-high double door that was once part of the lighthouse. Using computer graphics, CEA archaeologists are now piecing together how the edifice would have looked and functioned. "Little by little, from campaign to campaign, we have more results," says Jean-Yves Empereur, director of the CEA, emphasizing that he is attempting to reconstruct all of ancient Alexandria graphically, not just a single monument.

One tour company, ignoring warnings that the harbor's untreated sewage may cause typhoid, offers recreational diving to the lighthouse stones as well as to two dozen fragmented sphinxes on the sea bottom. For its part, the Egyptian government has floated plans for an underwater marine park, which tourists would visit in glass-bottomed boats. "Why not?" says Clement. "What's the point of doing the work if it's just for a few academics reading fusty, obscure journals?"

Of course, one Wonder has dropped off today's grand tour entirely—the Hanging Gardens. "Things have been going very badly for Babylon over the last 20 years," says Harriet Crawford, chairman of the British School of Archaeology in Iraq. Saddam Hussein's "reconstruction" program, begun in 1987, devastated the Mesopotamian city's venerable ruins. As a self-styled new Nebuchadnezzar, Hussein built a luxurious palace on a hill above the excavations of the original royal palace, then ordered the ancient edifice rebuilt using bricks stamped with his name. The Hanging Gardens—Babylon's trademark feature—played a key role in this farce: courtyards and passageways were built to integrate the supposed site of the gardens into the reconstruction. Ironically, new research carried out by Stephanie Dalley and others of the Oriental Institute at Oxford University suggests the gardens may not have been in Babylon at all, but in Nineveh, the ancient capital of Assyria in what is now northern Iraq. Nor are they thought to have been built by Nebuchadnezzar, but an Assyrian king, Sennacherib.

Misguided though it was, the work in Babylon shows the power of the past to shape the present. In seeking to connect himself to Iraq's most glorious era, "Hussein saw the significance of Babylon," says Crawford. "He used it as a symbol of national identity and triumph, to unite all the factions in Iraq."

The fate of the original Seven Wonders has long provoked a wide spectrum of reactions, from melancholy meditations on human vanity to the transience of man's achievements. But if their most obvious lesson is that our finest creations will one day turn to rubble, it is a lesson that we resolutely refuse to learn. Which is only as it should be, as the ancient Wonders' durability—if only in our imagination—so eloquently testifies.

PP. 122-123 GRANGER COLLECTION (2)

THE HANGING GARDENS.

Though the existence of the Babylon gardens cannot be proved, Alexander the Great is said to have gazed upon them in 323 B.C. from his deathbed at King Nebuchadnezzar II's palace. The king, legend has it, built them c. 580 B.C. for his greenery-starved wife.

# Back to Nature

*Artist Steve Tobin turns organic forms into sculpture*

BY AMEI WALLACH

AT 2,250 DEGREES Fahrenheit the fire burns lime green. Embers and scraps of molten bronze skitter onto the concrete floor of an open-air shed housing the furnace.

"Sweep it up," commands sculptor Steve Tobin, and ten assistants—shouting and brandishing shovels—rush forward and spring into a kind of dance. They've done this hundreds of times and are casual about protection. Some are dressed in shorts. Others wear scorched leather jackets, gloves, a mask. Tobin's concession is sunglasses.

As usual, there are several projects under way in Tobin's Bucks County, Pennsylvania, studio, and everyone seems to be doing everything at once. The molten bronze is for casting bones—deer, coyote, mountain lion—that the 47-year-old artist is welding together into a 7-foot-high, 12-foot-long sculpture called *Bone Wave*. The bronze bones—some 3,000 so far, with a thousand more to go—fit together like lace.

"Some of the pieces we do take 2,000 or 3,000 man-hours, which is a whole year's labor," says Tobin, who has made art out of a forest floor, tree roots and African termite hills. For an exhibition of 50 of his huge sculptures at the Natural History Museum of Los Angeles County and its sister Page Museum earlier this year, "we sent 150,000 pounds of artwork in five tractor-trailers." (That show has now been broken down into three smaller exhibitions—at the Laumeier Sculpture Park in St. Louis, Missouri, Florida International University's Margulies Collection in Miami and the College of the Atlantic in Bar Harbor, Maine.)

Tobin calls what he does—turning aspects of nature into sculpture—"visu-

"My work echoes the interaction between my own heartbeat and the pulse of nature," says Tobin (with his 12-foot-long sculpture *Bone Wave*, made of bronzed animal bones).

"I look at how pieces will function in 500 years," says Tobin. "I look at Easter Island, Stonehenge, the Pyramids. At different times they're integrated into different cultures in different ways. I'm trying to make icons like Stonehenge."

BILL BALLENBERG

Photo by Robert Reck

Photo by Dan Barsotti

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The Santa Fe Opera's 2004 season – "Challenging, unconventional and highly rewarding," according to General Director Richard Gaddes – should be exceptional. The schedule includes operas by five grand composers: Verdi's *Simon Boccanegra*, Berlioz' *Beatrice and Benedict*, Handel's *Agrippina*, Bellini's *La Sonnambula* and Mozart's *Don Giovanni*.

Photo by Ken Howard

*The Santa Fe Opera*

Following on the heels of the Santa Fe Opera 2004 season is the American premiere of the Vasili Medvedev Production of the ballet based on Pushkin's *Onegin*, featuring principals and soloists of the Marinsky Theater in St. Petersburg, Russia, on Sept. 3-4. For more information, call 800-280-4654 or 505-986-5900 or visit santafeopera.org.

The "Nicholas & Alexandra" exhibit will highlight the **Russian Summer** in Santa Fe, the biggest celebration of Russian culture outside of the Motherland. The event will run all summer long, showcasing the performing, visual and culinary arts, literature, poetry, fashions and music unique to the great empire of Russia. For more information visit russiansummer.com.

The Roy E. Disney Center for the Performing Arts at the **National Hispanic Cultural Center** in Albuquerque's South Valley is a $16 million, 691-seat proscenium theater that incorporates the latest technology in theater design. Its orchestra pit and shell, as well as its acoustics, make it an ideal venue to preserve, interpret, and showcase the theater, music and dance that perpetuate and promote the Hispanic culture. For more information on this summer's schedule, call 505-246-2261 or visit nhccnm.org.

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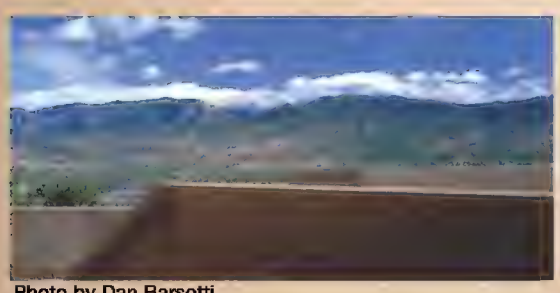

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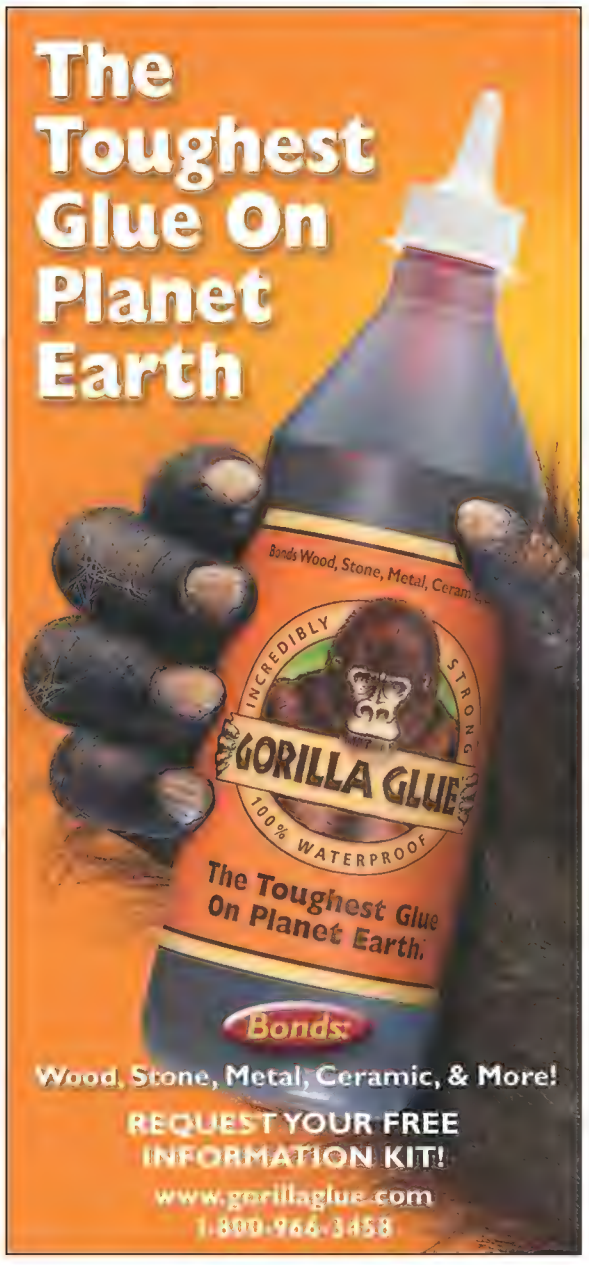

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"His anarchic art is there to jolt us into seeing the result of power: insect power, explosive actions, the terror of dreams."

al science." Art and science are often "regarded as mutually exclusive," he says, "because science is considered to be about deductive reasoning. But science defines the universe starting from basic assumptions. Art is trying to do the same thing using a different language."

With a degree in theoretical mathematics from Tulane University, Tobin is particularly interested in string theory, which proposes that everything in the universe is composed of vibrating loops of energy. In that spirit, he created a spiny organic work he calls *Uni,* Japanese for sea urchin, out of junked fireworks-launching tubes. The piece appears to be in throbbing motion, like string theory's loops of energy.

More recently he's been working on "Exploded Clay" sculptures (made by detonating fireworks in blocks of wet clay), which, at least in theory, pay homage to the Big Bang that most scientists believe created the universe. Open or closed, upright or hunched, concave or protruding, the sculptures appear ageless, as various in their frozen moment of creation as anything in nature. The Earth, Tobin points out, is also exploded clay.

STEVE TOBIN has always seen himself as odd man out. Growing up in suburban Philadelphia's tradition-bound Main Line, "I felt like a wild animal in the house," he says. "Everything was ordered, everything was structured. I felt out of place, like a piece of lint in a clean environment."

His father, Sylvan Tobin, is a second-generation manufacturer of men's and boy's clothing. His mother, Fran, raises orchids. When he was 10, his father built a treehouse, and that became the place where the boy hung out. "I felt more in harmony with nature," he says. "Nature is not as rigid. I was wild. I never really drank or stole cars. I was

To create his "Exploded Clay" sculptures (below) Tobin detonates fireworks that he's inserted in blocks of wet clay (above). The Earth, he points out, is also exploded clay.

BILL BALLENBERG; GEORGE ERML

conversing with the birds and the butterflies. I was sleeping in the woods. They call it antisocial." Not much has changed. He still casts himself as the outsider who never went to art school. "I did pottery," he says, "I did glass blowing, but I never formally studied art." In fact, it's his study of physics and math—his passion for science—that forms the basis of his art.

"Even as a child I used to see sets of things, and I would know how many there were," Tobin tells me, as we tour his 14 disheveled acres. "Sometimes when I'm swimming, I'll see a pattern of rocks and know how many red ones there are." It wasn't until he saw the 1988 film *Rain Man* (for which Dustin Hoffman won an Oscar for his role as an autistic savant) that Tobin realized that his facility for grasping patterns was not widely shared. "In mathematics I would know the answer and not know the method," he says, "and that got me in trouble in school."

TOBIN MADE his reputation creating sculptures out of glass that were at once both delicate and monumental. He was introduced to glass blowing in junior high school, but didn't take it up until 1977 when he was at Tulane and glass artist Gene Koss arrived to teach there. Tobin and Koss built Tulane's first glass furnace, and Tobin had his first exhibition in 1979. His early pieces were modest in scale, but he would go on to produce such works as the 41-foot-high *Waterfall* he created out of scrap glass tubing for an exhibition at the American Craft Museum in New York City in 1993. That same year, he suspended scores of handblown, 15-foot-tall glass "cocoons" from the ceiling of a cave for an exhibition at the Retretti Art Museum in Finland. "The engineers at Corning said I couldn't blow glass pieces 15 feet high because they wouldn't support themselves," he says. "But I blew them."

Tobin hasn't worked with glass for almost a decade and doubts that he ever will again. "I'm not loyal to any particular material," he says. "I invent processes that create pieces." He takes

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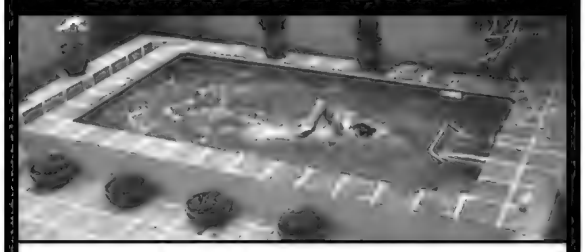

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"I feel more free than most artists," says Tobin (on the grounds of his Pennsylvania studio with one of his "roots" sculptures).

particular pride, for instance, in the method he came up with for casting a leaf in bronze through its stem. "I'd like to cast a spider web in bronze," he says. "I'd like to make clay pieces that are 20,000 pounds and explode them the size of a large room."

TO THAT END, on this day Tobin is making what he estimates to be at least the ten thousandth "experiment" in his "Exploded Clay" series, testing various "what if" scenarios. What if he uses more clay, or less? What if he increases the amount of explosives? What if he textures the surface with bronze dust or packs the unfired clay with glass?

This time he has loaded a 3,000-pound block of clay onto a large metal plate. The clay has been scored on the exterior with a grid and coated with glass and bronze sweepings. Copper wires connected to embedded explosives protrude from the center. "We're

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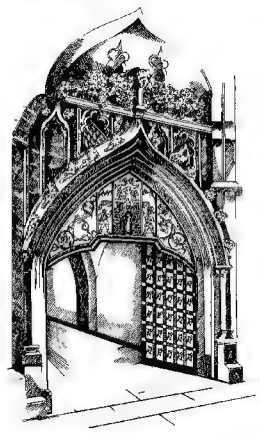

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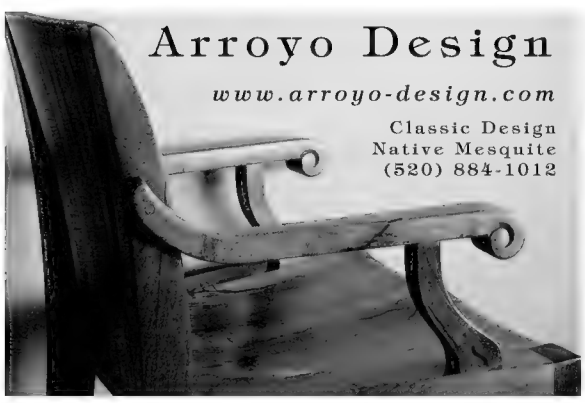


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ready," someone yells. Tobin's assistants scramble up a hill to watch at a safe distance. Tobin, wearing industrial earmuffs and a protective visor, takes the detonator behind a door. "Fire in the hole," he cries.

There's a tense silence. The clay explodes, not with a bang but a pop. Tobin shoves up the visor and grins. For him, this is what passes for elation. "I'm working my way up to that 20,000 pounds of clay," he says. "I'll make monumental outdoor pieces that you can walk inside. I've already made some that you can hold in your hand. It's like in mathematics: What happens in the smallest case? What happens in the largest case? What is your relationship to the size of the piece and the relationship of the piece to the environment?"

TOBIN LIVES ALONE in an 1820s house that reflects his having worked, over the years, in 20 different countries: African Dogon house posts flank the entrance; kente cloth from Ghana hangs from a ceiling; fossils are grouped near the fireplace. "I like to surround myself with things mysterious in themselves," he says. "I'm a bit of a hermit." He craves quiet, he says, because "my work really comes from my own heartbeat. If my life gets too frenetic, I can't feel my pulse and don't know what I'm doing."

There was a time when he had to grow his own food to support his art. Now he can sell a single work for as much as $400,000; he estimates it costs $45,000 a month to pay his crew and keep the furnaces fired. It helps that for the past six years he's had a partner, Kathleen Rogers, who helps arrange and promote his exhibitions. "Kathleen is really my muse," he says. "She put together the Los Angeles show."

TOBIN SAW his first termite hills—the craggy mounds that termites construct out of earth and saliva—in 1994, when he visited one of his assistants in Ghana. Fired with the urge to cast them in bronze, Tobin mortgaged his house to finance the $600,000 project. He then hired Ghanaian villagers to


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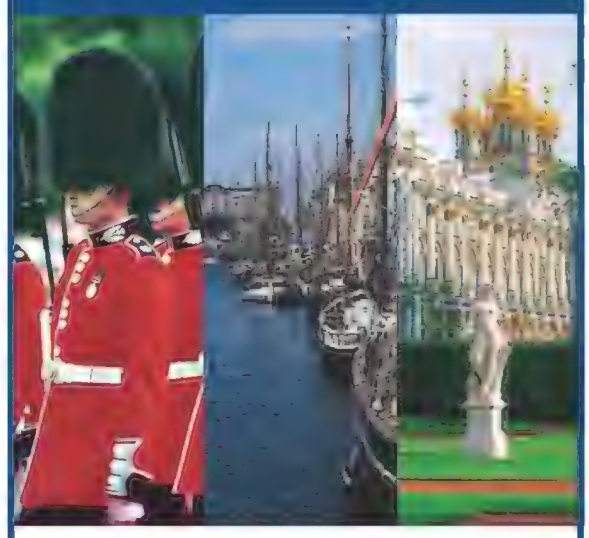

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make rubber-and-plastic molds of abandoned mounds. Of the resulting bronze termite hills—there are 12 in all, ranging in height from 8 to 14 feet—and of Tobin's work in general, critic William Warmus wrote: "His anarchic art is largely there to jolt us into seeing the result of power: insect power, explosive actions, the terror of dreams."

The termite mounds, like the bone walls, are examples of what Tobin calls his "Earth Bronzes" series. *Bone Wave*, which was made for the Los Angeles show, is now on display at Florida International University, along with one of Tobin's arched, upright eight-foot-high *Forest Floor* bronzes. To make them, he dug up sections of the forest floor and took them back to his studio on sheets of plywood. He then cast the sections exactly the way he found them—leaves, bark, spiders and all.

Similarly, for his bronze sculptures of tree roots—one of which was recently installed in Chicago's Lincoln Park—he excavated dead roots as large as 30 feet in diameter, then cast them in bronze. ("Maybe 200 castings to make a single piece," he says.) He welded them together and applied a patina of iron oxide. Then he set them on the ground like baroque domes to be walked under and looked up through.

"When you walk away from the roots and go on with your life, hopefully the next time you look at a tree, your mind will travel underground and see things not readily apparent," he says. "We all have roots. We all have histories. We all have mysteries below the surface."

Tobin's bronze roots are reminiscent of artist Louise Bourgeois' giant welded spiders, but drained of the terror and the humor. To Tobin, emotions are fleeting; he aspires to something more lasting. "I look at how pieces will function in 500 years," he says. "I look at Easter Island, Stonehenge, the Pyramids. At different times they're integrated into different cultures in different ways. I'm trying to make icons like Stonehenge."

*Art critic* AMEI WALLACH *has written for the* New York Times *and* Vanity Fair.

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# A Love Letter Set to Music

*The night a teenager met the girl of his dreams 50 years ago, the stars were bright above...* ~ BY NEIL AMDUR

*Shoo doot 'n shoo be doo,*
*Shoo doot 'n shoo be doo . . .*

You were on the dance floor with the one who turned you inside out. And then the music started, and you closed your eyes and floated away.

*In the still of the night*
*I held you, held you tight*
*'Cause I love, love you so*
*Promise I'll never let you go*
*In the still of the night . . .*

Everyone has a special song buried somewhere in their memory. For me, and I suspect for a lot of others of my generation, a doo-wop ballad that a 19-year-old soldier wrote to his sweetheart while standing guard duty on a starry fall night still shimmers like the eternal first love. As its author would agree. "There were other nights that we spent together," says Fred Parris, "but there's only one first time."

More than a decade ago, "In the Still of the Night" was voted the number one song by listeners on WCBS-FM's 20th anniversary all-time top 500, ahead of even "Earth Angel," "Mack the Knife" and "Hey Jude."

Recorded with Parris' group, The Five Satins, in a church basement in New Haven, Connecticut, it was released in 1956. The song didn't scale the pop heights of Elvis Presley's number one hit that year, "Heartbreak Hotel," but its popularity would grow, thanks to its simplicity and its meaning for blacks and whites, men and women, boys and girls. It has what music professor and author Gage Averill describes as "great resonance," engendering "intense nostalgic revivalism" that continues today.

"There were other nights that we spent together, but there's only one first time," says "Night" author Fred Parris (in his Connecticut studio) of his lyrical memory.

*I remember that night in May*
*The stars were bright above*
*I'll hope and I'll pray*
*To keep your precious love . . .*

Almost effortlessly, the three-minute, five-second song distills the era's seething social energies. "The sexual revolution and youth revolution and racial revolution that emerged in the 1950s are all intermingled in the music," says Tom Heed, an associate professor of American history at Ramapo College in New Jersey. "You can't think of one without the other." Jim Loehr, a Florida-based psychologist and author, says "the song really touched a nerve that was deeper than most people realized. Music reflects so much of where people are. It's the way culture vibrates at that particular time."

*So before the light*
*Hold me again, with all of your might*
*In the still of the night . . .*

But what is it about "In the Still of the Night," which rock critic Robert Christgau calls "my favorite doo-wop song," that evokes such strong emotions for so many listeners? "When I hear that song," says psychotherapist Roberta Schiffer, "I smile. It was a way to be sexy, without being overtly sexy. It was still there, the body feelings and the reaction of sexual feelings."

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"Music signaled in various places that change was upon us. And that kind of integration was significant."

ticultural and international affairs at the University of Connecticut, grew up in the segregated sections of Tampa-St. Petersburg. Music, he says, was "somewhat safer" to grapple with than more provocative civil rights issues. "It signaled in various places that change was upon us. And that kind of integration was significant."

FRED PARRIS met Marla, the "girl of my dreams," at an amusement park in West Haven, Connecticut, in May 1954, fifty years ago last month. "Destiny prevailed," Parris recalls. "I couldn't believe my luck." He and Marla got engaged, and when he enlisted in the Army in 1955, she moved in with Parris' family.

After spending a weekend with her in Connecticut, the young soldier spent the entire train ride back to Philadelphia, where he was stationed, thinking about "how we met, the good times, that day in May." He goes on. "When I arrived at camp, I went straight to the day room. There was a piano there and I started playing the chord in my head and the words in my heart. Before I realized it, it was time to go to guard duty. It was a cold, black night, and the stars were twinkling. The setting was very apropos for my feelings and emotions."

Alas, that Connecticut weekend would be the couple's last together. That winter, Marla yielded to her mother's pleas to join her in California. The couple saw each other only one more time.

Over the years, Parris would marry twice, rebound from flirtations with drugs and alcohol, survive a decade-

*In The Still Of The Nite (I'll Remember)*; words and music by Fred Parris. © 1956 (renewed) LLEE Corp. All rights reserved.


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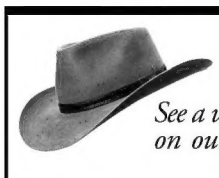

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More than 20 different Satins (Parris, far left, c. 1958) have sung of that evening.

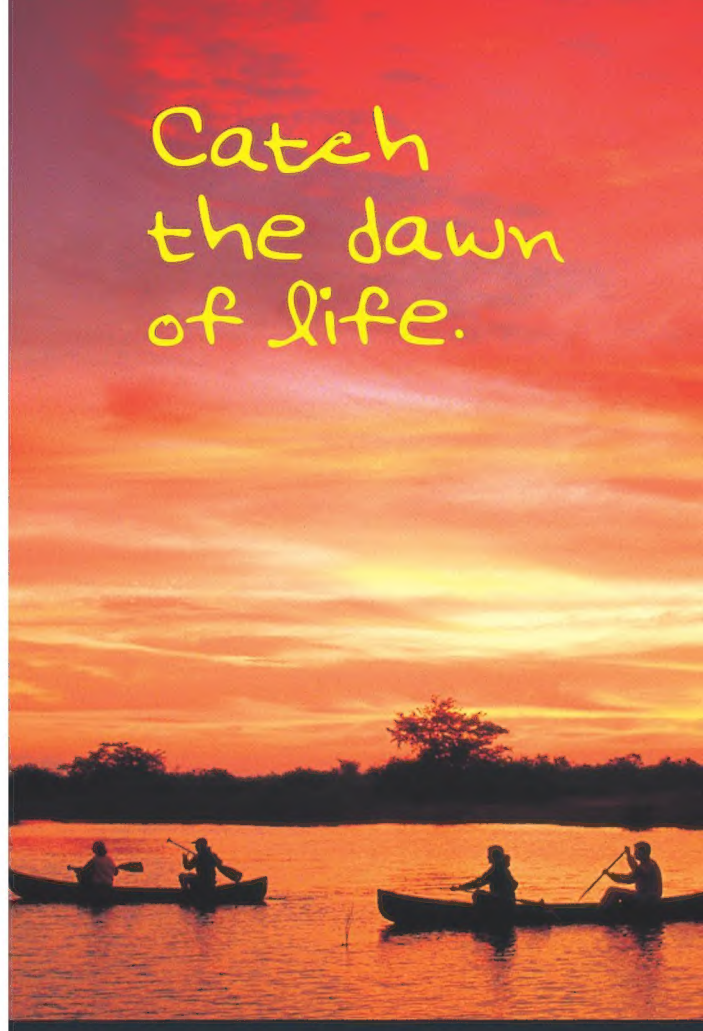
long legal challenge by an ex-Satin to the rights to the name of his group and see "In the Still of the Night" recorded by artists ranging from Ronny Milsap, BoyzIIMen and the Beach Boys. There have been many "Five Satins" groups. Their last hit, "Memories of Days Gone By," was recorded in 1982. The group, with Parris singing lead tenor, still performs at golden oldie convocations.

"The song was like a love letter set to music," Parris says today. "It squeezed every bit of romance out of me."

"It's an accident that happened perfectly," Walt DeVenne, a Boston-area disc jockey for almost four decades, says of the song's enduring quality. "It was our music—the kids' music. Blacks, whites. The music was good. You didn't care if it was white or black. It didn't matter."

Film and TV composer Ron Jones agrees. "There's a tangible chemistry that the song evokes," he says. "The black farmer in Mississippi can listen to it differently than a steelworker in Canada, but they both relate to the romance of the time and the mind." It makes you feel, he adds, "like being on *Sputnik* looking down rather than being in a car looking up. It's this broad landscape, with lyrics so broad you could be in Russia. It's operatic, with a high tenor above the accompaniment like 'Ave Maria,' and its chord progressions are hymn-like, like knights in shining armor. That's why it has the power. It is universal."

*NEIL AMDUR was sports editor of the* New York Times *from 1990 to 2002. He is now senior editor for recruiting for the newspaper.*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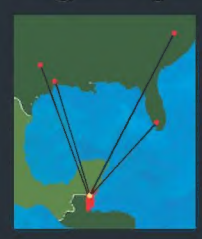

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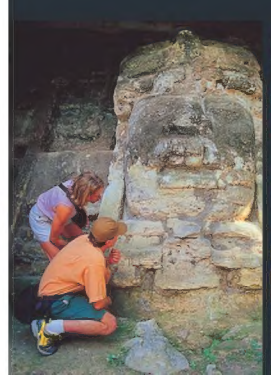

# Who Wants to Be a Billionaire?

*A Rockefeller's rules for raising responsible children*

BY DORIE McCULLOUGH LAWSON

*John D. Rockefeller Jr., the son of Standard Oil tycoon John D. Rockefeller, made philanthropy his life's work. He saw himself as the steward—not the owner—of the vast fortune his father had made, distributing more than half a billion dollars for the public good over the course of his career. Among his benefactions were the restoration of Versailles and of the Rheims Cathedral, the creation of Acadia and Grand Teton national parks, the donation of land for the United Nations headquarters, and the restoration of Colonial Williamsburg. Here, in a letter dated May 1, 1920, the 46-year-old John Jr. lays out the financial expectations for 14-year-old John D. Rockefeller III, who went on to become chairman of the board of the Rockefeller Foundation.*

Memorandum between PAPA and JOHN. Regarding an Allowance.

1. Beginning with May 1st, John's allowance is to be at the rate of One dollar and fifty cents ($1.50) per week.

2. At the end of each week during which John has kept his accounts accurately and to Papa's satisfaction, the allowance for the succeeding week will be increased ten cents (10¢) over the week just ended, up to but not beyond a total per week of two dollars ($2.00).

3. At the end of each week during which John has not kept his accounts accurately and to Papa's satisfaction, the allowance for the succeeding week shall be reduced ten cents (10¢) from the week just ended.

4. During any week when there have been no receipts or expenditures to record the allowance shall continue at the same rate as in the preceding week.

5. During any week when the account has been correctly kept but the writing and figuring are not satisfactory the allowance shall continue at the same rate as in the preceding week.

6. Papa shall be the sole judge as to whether an increase or a decrease is to be made.

7. It is understood that at least Twenty Per cent (20%) of the allowance shall be used for benevolences.

8. It is understood that at least Twenty Per cent (20%) of the allowance shall be saved.

9. It is understood that every purchase or expenditure made is to be put down definitely and clearly.

10. It is understood that John will make no purchases, charging the same to Mama or Papa, without the special consent of Mama, Papa or Miss Scales [a family governess].

11. It is understood that when John desires to make any purchases which the allowance does not cover, he will first gain the consent of either Mama, Papa, or Miss Scales, who will give him sufficient money with which to pay for the specific purchases, the change from which, together with a memorandum showing what items have been bought and at what cost and what amount is returned, is to be given to the person advancing the money, before night of the day on which the purchases are made.

12. It is understood that no governess, companion or other person in the household is to be asked by John to pay for any items for him, other than carfare.

13. To any savings from the date in this account which John may from time to time deposit in his bank account, in excess of the twenty per cent (20%) referred to in Item No. 8, Papa will add an equal sum for deposit.

14. The allowance above set forth and the agreement under which it shall be arrived at are to continue in force until changed by mutual consent.

The above agreement approved and entered into by
*John D. Rockefeller, Jr.*
*John D. Rockefeller 3rd*

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We welcome submissions for the Last Page, including original humor pieces and personal essays. They may be e-mailed to lastpage@simag.si.edu or sent by regular mail to Last Page Editor, Smithsonian Magazine, MRC 951, P.O. Box 37012, Washington, D.C. 20013-7012. Alas, because of the volume of submissions, none can be returned.

STEVE McCRACKEN